The Journal of the American Pharmaceutical Association

Volume II JUNE, 1913 No. 6

Office of Publication, 79-89 North Third St., Columbus, Ohio.

Subscription, $3.00 per annum, within the United States. To Canada, $3.35. To other foreign countries in Postal Union, $3.50 per annum. Single copies, twenty-five cents.

Entered at the Postoffice at Columbus, Ohio, as Second-Class matter.

Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

THE HUGHES-BACON BILLS.

THE bill to Promote the Efficiency of the Hospital Corps of the United States Army has been reintroduced in the 63rd congress by Representative Hughes and Senator Bacon, the only changes in the text being the retention of the title Hospital Corps, instead of the title Medical Corps proposed by the original bill, the limiting of the number of sergeants major to 30, and of sergeants first-class to 300, and the dropping of the grade of privates first class.

The text of the present bill reads as follows:

"That the Hospital Corps of the United States Army shall constitute the enlisted personnel of the Hospital Corps now authorized by law and shall consist of thirty sergeants major, at $75 per month; three hundred sergeants, first class, at $65 per month; sergeants, at $36 per month; corporals, at $24 per month; cooks, at $30 per month; privates, first class, at $21 per month, and privates at $16 per month, with such increase for length of service and other allowances as are or may hereafter be established by law."

Though brief in its terms, the bill is believed by those who have studied the subject to provide the means necessary to bring about the changes in status and pay that have been so long desired, and that seem to be absolutely necessary to bring the personnel of the Hospital Corps to a grade of efficiency commensurate with the grade of service which its members are expected to render.

The manner in which the surgeon-general of the army views the proposed reform is expressed in his annual report for 1912, in which he says:

"This office last year in a memorandum to the Chief of Staff dated July 27, 1911, referring to the report of the Chief of Staff to the Secretary of War,

pointed out that the pay of the Hospital Corps in the pay bill of 1908 was not increased proportionately to that of other enlisted men, so that an injustice was done the Hospital Corps which has made it difficult to obtain a good class of men and retain the services of non-commissioned officers. When the Hospital Corps was organized in 1887, it was recognized that its members would be required to do work that was not attractive to enlisted men and which would require special qualifications. To secure suitable men to perform these unattractive duties, non-commissioned officers of the Hospital Corps were given pay considerably in excess of most non-commissioned officers of the line and at a later date the pay of the privates was likewise proportionately increased. This principle was lost sight of in the legislation of 1898 and its recognition in future legislation is considered necessary to secure the efficiency of the service.

"The following grades and rates of pay are recommended: Sergeants major (new grade) thirty at $75 per month, with the increased pay for service as now authorized for sergeants first class. Sergeants' pay to be increased from $30 to $36 per month. Corporals, $24 per month (no increase). Privates, first class, pay to be increased from $18 to $21 per month. Privates, $16 per month (no increase)."

That the claims of the members of the Hospital Corps are not unreasonable, but eminently just, is apparent from the fact that the farrier who cares for sick mules under the direction of the veterinary surgeon receives a higher wage than the private first class of the Hospital Corps who cares for the soldiers and officers when in hospital. Evidently, on the score of attention when ill, the mule has several points the better of the officer or private.

While the Sergeants of the Hospital Corps actually receive less pay than the non-commissioned officers of the same grade in any other branch of the service, they are also deprived of the opportunity of qualifying for the so-called special ratings in gunnery, marksmanship, etc., through which the sergeants in all other branches may obtain added pay ranging from $2 to $9 per month.

Owing to these and other inequalities of pay and opportunity, the Hospital Corps is now recruited mainly from men who realize their inability to make good in other branches of the service where the pay and opportunities for advancement are so much greater. It is a matter of official record that the morale and quality of the Hospital Corps are progressively declining quantities.

Then consider the qualifications which are *expected* from the Sergeant of the Hospital Corps:

"To obtain the position of sergeant in the Hospital Corps, the soldier is required to qualify in a written examination, in pharmacy, materia medica, care of sick, elementary hygiene, arithmetic, minor surgery and hygiene, and is, in addition, examined orally in army regulations, nursing, practical pharmacy, clerical work, drill, minor surgery, including extraction of teeth."

As a matter of fact, the sergeants first class are practically the house surgeons, pharmacists and chief nurses combined, of the military hospitals.

The term "expected" was used above advisedly, for the reason that under existing conditions it is absolutely necessary to accept the result of almost any kind of an examination as satisfactory in order to fill vacancies.

Some years ago the American Pharmaceutical Association took up the cause of the pharmacists in the Navy and U. S. Public Health Service, and in spite of repeated discouragements continued its propaganda in their behalf until a

fair degree of success has been obtained. Naval pharmacists who formerly ranked next to the negro cook, now receive commissions, with the rank and pay of ensign, which is about the equivalent of a second lieutenant on land, while under the revised regulations recently adopted for the Public Health Service, the pharmacists of that service have had their conditions materially improved by an increase of pay to $1600, $1400, and $1200, for pharmacists of the first, second, and third classes, respectively, with a commutation amounting to $25 per month.

The accomplishment of these reforms so long desired and striven for makes it still more necessary that the claims of the army pharmacists be recognized, and as many of the members of this Association as possible should at once write their senators and representatives in congress, requesting them to favor the Hughes and Bacon bills to improve the efficiency of the Hospital Corps. Do not let this matter go by default.

For the encouragement of those who may never have written their senators or representatives, it may be said that the latter are, as a rule, only too glad to hear from their constituents concerning the merits or demerits of proposed legislation, and consider themselves favored by being so advised.

J. H. BEAL.

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THE FEDERAL NET WEIGHT LAW.

DURING the closing days of the 62d Congress, the so-called Gould Net Weight Bill was enacted and became a law by the signature of President Taft.

The bill amended Section 8 of the Federal Food and Drugs Act, which relates to misbranding, by striking out the words:

"Third. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package," and inserting in lieu thereof the following:

"Third. If in package form, the quantity of the contents be not plainly and conspicuously marked on the outside of the package in terms of weight, measure, or numerical count: provided, however, that reasonable variations shall be permitted, and tolerances and also exemptions as to small packages shall be established by rules and regulations made in accordance with the provisions of Section 3 of this Act."

Section 2 of the Gould law reads as follows:

"Section 2. That this act shall take effect and be in force from and after its passage: provided, however, that no penalty of fine or imprisonment, or confiscation shall be enforced for any violation of its provisions as to domestic products prepared or foreign products imported prior to eighteen months after its passage."

The object of the delay in enforcing the penalties of the act is, of course, to enable manufacturers and dealers to dispose of packages already in stock, and to afford them a reasonable time for necessary changes in containers and labels.

The question has been raised as to whether the amendment affects both foods

and drugs, or only the former, but since it is that portion of Section 3 of the act that is specifically stated to apply to the misbranding of foods that is amended, the inference would be that it does not apply to drugs.

It should be borne in mind, however, that, according to circumstances, certain articles may be considered either as foods or drugs, and that by food inspection decision No. 85, it has been declared by the Board of Food and Drug Inspection that the decision as to whether a given product be a food or a drug shall depend not only upon what claims are made for it, but also upon the uses to which it is put. By food inspection decision No. 48, it is also declared that products which are commonly added to foods in their preparation are properly classed as foods, which latter ruling would naturally apply to condimental, flavoring and analogous substances.

Probably these obscurities will be cleared up when the Secretaries of Agriculture, the Treasury and of Commerce shall have announced the rules and regulations for the administration of the new portion of the law.

J. H. BEAL.

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THE COMPARATIVE DOSES OF HEROIN AND MORPHINE.

IN the May issue of the *Practical Druggist*, Editor Otto Raubenheimer discusses the comparative doses of Heroin and Morphine, and calls attention to the fact that benzoyl-acet-aconitine and heroin are remarkable exceptions to the general rule that the acetylation of an organic compound usually produces a less toxic product, and that diacetyl-morphine was given the name "heroin" on account of its heroic properties.

He also calls attention to the fact that heroin has come to be regarded as even more powerful than was at first supposed, and that there has been a continual disposition on the part of pharmacologists to reduce its average and maximum doses; and that authorities giving the average dose of morphine as 8 to 15 milligrams (1-8 to 1-4 gr.), give the average dose of heroin as from 1-6 to 1-3 this amount. For this reason he criticises the so-called Drug Trade Conference Bill, because it makes certain exemptions in regard to preparations which contain "one-fourth of a grain of morphine or one-third of a grain of heroin," etc., on the ground that in proportion to the amount of morphine permitted, the heroin should be very much less than 1-3 of a grain.

Editor Raubenheimer is undoubtedly correct in the statement that one-third of a grain of heroin, so far as dosage is concerned, is out of all proportion to one-fourth of a grain of morphine. It should be remembered, however, that the Conference Bill does not aim to establish any definite ratio of dosage, and that the exemption simply relieves those who dispense preparations which do not contain more than 2 gr. of opium, 1-4 of a gr. of morphine, 1-3 of a gr. of heroin, or 1 gr. of codeine in a fluid or avoirdupois ounce from the necessity of registering as dealers and the payment of the Federal tax. These exemptions apply only when such remedies or preparations are sold, distributed or dispensed as medicines, and not for the purpose of evading the provisions of the act, i. e., the avoidance of registration and payment of the government tax. If sold or

dispensed for any other than strictly medicinal purposes, the exemption would not apply.

It should be remembered also that the Conference Bill does not aim to control the distribution of narcotics to consumers, since this is a function that rests exclusively with the states, and the general government cannot have any control or supervision over the traffic farther than is necessary to collect the Federal tax.

Notwithstanding these facts, the writer is inclined to side with Editor Raubenheimer, in the view that the proportion of heroin in the exempted preparations should be reduced in amount.

J. H. BEAL.

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CLASS OBLIGATION AND RESPONSIBILITY.

CONCERNING the punishment of the "dope seller" in particular and the responsibility of pharmacists in general for the moral and civil delinquencies of their fellows, the editor of the *New Idea* discourses in this fashion:

"Here in the moral city of Detroit a couple of shadow men from the Pinkerton force recently entered a drug store disguised as longshoremen. They sought a place to buy cocaine and they got it. Inside of fifteen minutes, a proprietor and clerk were safely behind bolted bars. The strong hand of the law moves slowly but steadily. There must be a reaction to this cocaine and morphine traffic and it's beginning to act.

"The new standard of drug store ethics eliminates traffic in habit-forming drugs. The druggist who stoops to this underhand business must eventually meet the minion of the law. The authorities intend making an object lesson of one 'dope seller' in each community and thus put an end to this illegal traffic for all time. * * * If the drug trade is to raise its standard, it must first discard the lower element of pharmacists. If right shall survive—wrong must perish. Do your part to eliminate undesirable druggists who are undermining the foundation wall of the profession."

Herein our attention is called to the existence of an important social fact, namely, that every man must, to a certain extent, suffer for the sins of the class to which he belongs, and conversely, that every class must suffer for the shortcomings of its individual members.

If two or three percent of the men engaged in a particular calling are convicted of wrongdoing, all are liable to be suspected to be guilty of similar offenses, or in other words, the evil acts of the two or three percent of evil doers in any given vocation are more potent in determining the standing of the vocation in public esteem than the ninety-seven or ninety-eight percent who pursue an upright and blameless business or professional career.

Out of these facts grow the responsibility of a class for its members, and the obligation of members to their class, and just in proportion as these reciprocal relations are held in esteem or disregarded, so the class flourishes or retrogrades.

Possibly in no other calling are these qualities of greater importance than in pharmacy, and possibly in no other calling have they been more persistently neglected.

One dishonest or incapable pharmacist can poison the minds of a whole com-

munity against pharmacists as a class. One detected substitutor, or one who prostitutes his calling by the reckless selling of alcoholic liquors or narcotic drugs, leaves in the public mind the suspicion that there are many others of the same kind.

Consequently, when a pharmacist has been detected in some violation of the law or in some gross offense against ethics we cannot afford to wrap ourselves in the cloak of our own self-righteousness and leave the matter to the public prosecutor. We should be the first to invoke the law and to see to his punishment, and unless we do this, we have no right to complain if we are regarded as particeps criminis.

Pharmacists should be as jealous of their professional good name as the government is of its coinage, and should pursue those who debase it just as relentlessly and as fearlessly.

Class credit is as important as personal credit, and far-sighted business prudence will protect both. J. H. BEAL.

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SUGGESTED PROGRAM FOR THE SIXTY-FIRST ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Nashville, Tenn., August 18-23, 1913.

MONDAY, AUGUST 18.

9:00 a. m. *Meeting of the Council.*
10:30 a. m. *National Association of Boards of Pharmacy.*
3.00 p. m. *First General Session of the Association.*
7:30 p. m. *First Session of the House of Delegates.*
9:30 p. m. *President's Reception.*

TUESDAY, AUGUST 19.

9:00 a. m. *Meeting of the Council.*
10:30 a. m. *Second General Session of the Association.*
2:30 p. m. *Women's Section.*
Section on Scientific Papers.
Section on Commercial Interests.
National Association Boards of Pharmacy. (2d session.)
7:30 p. m. *Second Session of the House of Delegates.*
Section on Pharmacopoeias and Formularies.

WEDNESDAY, AUGUST 20.

9:00 a. m. *Meeting of the Council.*
10:30 a. m. *Section on Education and Legislation.*
12:30 p. m. *Reunions of College Alumni.*
2:30 p. m. *Section on Practical Pharmacy and Dispensing.*
Conference of Pharmaceutical Faculties.
6:30 p. m. *Reunions of College Alumni.*
8:00 p. m. *Section on Education and Legislation.* (2d session.)
Section on Commercial Interests. (2d session.)
Women's Section. (2d session.)

THURSDAY, AUGUST 21.

9:00 a. m. *Meeting of the Council.*
10:30 a. m. *Joint Session of the Section on Education and Legislation.*
Conference of Pharmaceutical Faculties, and National Association of Boards of Pharmacy.
2:30 p. m. *Women's Section.* (3d session.)
Section on Scientific Papers. (2d session.)
Section on Practical Pharmacy and Dispensing. (2d session.)
4:30 p. m. *Trolley Ride over the City of Nashville.*
8:00 p. m. *Garden Party and Park Concert.*

FRIDAY, AUGUST 22.

9:00 a. m. *Meeting of the Council.* (Organization Meeting.)
10:30 a. m. *Section on Historical Pharmacy.*
Conference of Pharmaceutical Faculties.
2:30 p. m. *Excursion to the Hermitage.*
8:00 p. m. *Section on Historical Pharmacy.* (2d session.)
Third Session of the House of Delegates.
Section on Pharmacopoeias and Formularies. (2d session.)

SATURDAY, AUGUST 23.

9:00 a. m. *Meeting of the Council.*
10:30 a. m. *Final General Session of the Association.*

In constructing the above Provisional Program, it has been sought to provide at least two sessions for each Section. If more time is necessary to dispose of the business of a Section, it will be left to the wisdom of that Section to select a time for a third session that will occasion as little interference as possible with other sessions.

One of the functions of the House of Delegates is to relieve the General Sessions, as far as possible, from the consideration of matters that are not in shape for immediate action; as a consequence, the General Sessions should require less time than heretofore.

The hours assigned to the Women's Section are those which, at previous meetings, have commonly been devoted to shopping expeditions and similar diversions, so that these sessions can hardly be considered as adding to the extent of the usual program.

In criticising the suggested program, it should be borne in mind that there must of necessity be more or less interference, and that it would not be possible to arrange the various sessions consecutively without devoting a period of at least ten days to the work of the Convention.

Suggestions for the amendment of the program should be sent at as early a date as possible to the Secretary of the Council, Mr. J. W. England, 415 N. 33d St., Philadelphia, Pa.

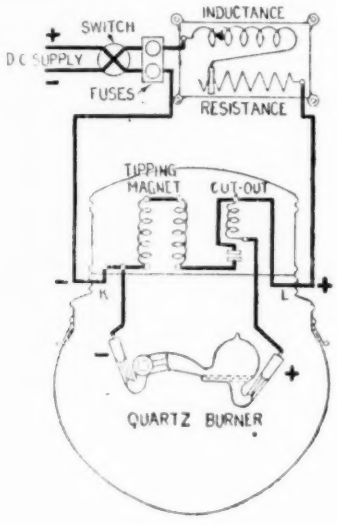
Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

A MERCURY VAPOR LAMP FOR BLEACHING.

L. N. SAHM, NEW YORK CITY, AND WM. MITTELBACH, BOONVILLE, MO.

The following cut shows the construction of a mercury lamp made by the Hewitt Electric Co., of Hoboken, N. J., that is used for bleaching oils and other articles in the Heller & Merz laboratories of New York City:



As indicated, the mercury is placed in the large end of the glass apparatus, and quartz crystals in the small end, the whole being exhausted of air. A current of electricity is then passed into the lamp, converting the mercury into vapor, which coming in contact with the quartz produces ultra-violet rays having powerful bleaching properties. In order to handle these most powerful rays, the lamp is suspended under a bell reflector, open at the bottom. Over all a square wooden box is placed having a removable platform or tray so arranged that the object to be bleached is readily removed while the light is completely hidden to the operator. This is necessary for these rays are destructive to the human eye and will quickly destroy it, if exposed directly to the light.

By actual experiment it has been shown that articles can be bleached under this lamp in much shorter time than under the most favorable conditions of the sun's rays.

Some of the fixed oils as poppy, corn, almond, etc., are quickly deprived of coloring matter, an object desired in their use for some purposes. Other pro-

ducts used in pharmacy can also be treated with this bleaching process, and the lamp be used with practicable results in other directions.

The lamp was invented in Germany four or five years ago, and is being used in that country to a great extent. Its utility is beyond the experimental stage, and ought to be of interest to those working with bleaching processes.

REPORT OF COMMITTEE ON DRUG MARKET, AUGUST, 1912.

Your committee was notified of their appointment so recently that other engagements have prevented some of the members from working and our report lacks their usual valuable contributions. Two conditions attract our attention. First, the statements of Messrs. Roemer, Diekman, Sayre and others that many physicians are dispensing inferior drugs which they purchase at lower than honest market prices. Second, the reports of various state boards that retail pharmacists are either culpably or carelessly guilty of dispensing own make goods of very inferior quality. Simple solutions which should be readily made of standard quality are far below standard. One board finds about 17 percent defective. Another 73 percent, and another 56 percent. Camphorated Oil ranged from 38 percent to 85 percent of official strength. Spirit of Lemon from 1.2 percent to 49 percent of official standard. Spirit of Peppermint from 4 percent to 73 percent, thirty-five convictions being secured. Another authority calls attention to the great variation in the strength of ordinary tinctures as dispensed. Tinct. Belladonna ranged from 1.05 percent to 3.76 percent extractive, a fair average being 1.2 percent to 1.6 percent. Tinct. Digitalis ranged from 1.08 percent to 3.45 percent extractive, a fair average being 3.8 percent to 4.5 percent. Tinct. Gentian Comp. ranged from 1.08 percent to 5.01 percent, a fair average limit being 5 percent to 6 percent. Tinct. Hyosycamus ranged from 1.04 percent to 4.27 percent, a fair average limit being 1.45 percent to 1.75 percent. The average limits of extractive on Tinct. Bellad. and Tinct. Hyoscyamus are based on standard strength in alkaloid. Under present conditions a physician can dispense what he will, but no manufacturer can supply him goods defective in quality or untrue to title, and an active campaign along this line should soon correct the evil.

To guard against the condition in the retail stores the State Associations should caution the proprietors against permitting the manufacture of the simplest products by any one who does not realize the importance of absolute accuracy. In addition, it may be advisable to suggest that the tinctures be examined to assure their being within reasonable limits of strength. The personal element causes trouble in this line as in others. Powd. Sulphate of Iron assaying but 67.5 percent has been shipped by a painstaking, reliable house in error for the U. S. P. Dried Sulphate. Inattention by the proof reader has permitted labels to say what the proprietor did not intend, so that constant vigilance is important to maintain a proper standard in all departments.

Essential Oils. Many of these oils are systematically adulterated and in a manner which is difficult for the ordinary analyst to detect. The simple determination of physical constants is no longer sufficient to detect adulterants, as products are offered for the express purpose of defeating the ordinary tests. Organic compounds are offered as substances that will "enrich" an oil, that is, raise the alcohol or ester content of an adulterated product. Certain oils are also "standardized," that is, cut down to a definite percentage composition if found to run high in content of the active ingredient. In some instances these practices are more or less openly conducted under the idea that this is a "scientific" method of handling variable products, but the aim of these dealers—obtaining high prices for an inferior product, belies their words. In connection with this report we call attention to the paper by the Chairman of the Committee on the Ash Standard and to the contribution by Dr. Kebler received too late to embody with this report.

It is to be remembered that many of the following cases refer only to individual lots encountered and it is not to be understood that the articles named are usually, or even frequently, inferior.

Acetone. Commercial varies in composition and distills at from 50° to 70° C. —W. L. SCOVILLE.

Acid, Lactic. Usually runs low by U. S. P. method of estimation, nine samples ranging from 72.6 percent to 74.7 percent. If the lactide were all included all samples would show a neutralizing power above 75 percent.—W. L. SCOVILLE.

Acid, Phosphoric. Four samples assaying 85 percent were colored brown by a trace of organic matter.—E. L. PATCH.

Acid, Tannic. Crude acid, containing traces of gums and resins, is frequently offered. It is compact, heavy and usually dark in color.—W. L. SCOVILLE.

Acid, Tartaric. Lots are found containing traces of copper.—E. L. PATCH.

Alcohol. Two lots of cologne spirit darkened and precipitated with Solution of Nitrate of Silver. One lot had considerable color and excess of organic matter.—E. L. PATCH.

Ammonium Bromide. Lots were very dirty but met chemical tests of U. S. P. —E. L. PATCH.

Antipyrine. One sample slightly off color, melted at 110°. Impurities due to careless manufacturing.—E. H. GANE.

Arnica Root. Is reported heavily mixed with some foreign roots. As high as 75 percent of certain unidentified roots has been found in market samples.—E. H. GANE.

Asafoetida. Seventeen samples gave from 1.8 percent ash to 62.45 percent. From 50 percent to 70 percent alcohol soluble material for most samples, but the range was from 37.6 percent to 76.27 percent.—W. L. SCOVILLE.

There is a marked difference in methods of stating the alcohol soluble contents. Some extract with alcohol, evaporate at low temperature to soft extract, and give the result as alcohol soluble contents. Others extract with alcohol, weigh the

residue and call the difference alcohol soluble contents. In this method water and all volatile matter is included.

		Ash	Insoluble in alcohol	Volatile matter	Alcoholic extract	Total alcohol soluble
1	Mass	5%	29%	16.5%	54.5%	71%
2	Powd.	28%	53.7%	5.3%	41%	46.3%
3	Mass	32.5%	38%	15.5%	46.5%	62%
4	Lump	15%	46%	14.5%	39.5%	54%
5	Powd.	22%	48%	—6%	46%	52%
6	Lump	23%	42%	12%	46%	58%
7	Powd.	43%	66%	8%	26%	34%
8	Powd.	39%	+68.5%	7.5%	24%	31.5%
9	Powd.	36%	63.5%	11.5%	25%	36.5%
10	Lump	50%	64%	6%	30%	36%
11	Lump	+56%	70%	10%	20%	30%
12	Mass	—5%	29%	16.5%	+54.5%	71%
13	Powd.	50%	82%	6%	—12%	—18%
14	Lump	16%	—28.5%	+21.5%	50%	+71.5%
15	Powd.	25%	54.5%	8.5%	37%	45.5%

Lots 9 and 15 were labeled to contain 15 percent of Magnesium Carbonate. Lot 8 was labeled to contain 25 percent ash.—E. L. PATCH.

No. 1 ash 6.39 percent, alcohol soluble 43.01 percent. No. 2 alcohol soluble 25.09 percent. No. 3 alcohol soluble 35.52 percent. This contained a large amount of starch. Several lots have been rejected at the port of New York owing to the presence of an excessive amount of terebinthinous oleoresin resembling elemi. Much of this variety has, however, found its way into the market through other ports.E. H. GANE.

Aspirin. Samples had melting point of 130° to 136° C.—W. L. SCOVILLE.

Belladonna Leaf. Two-thirds of all samples adulterated with Ailanthus or with poke berry leaves.—PHARM. ERA.[1] Two lots assayed only 0.309 percent and 0.30 percent. Powders have been offered from abroad consisting of the whole plant powdered. "Italian" belladonna powder has also been offered consisting of the above, mixed with some other leaf adulterant.—E. H. GANE.

Buchu. Long buchu is sometimes adulterated with klip buchu from Diosma fragrans.—WM. MANSFIELD.

Burgundy Pitch. Market samples are mainly if not wholly artificial. No house will guarantee to furnish the true article.—E. H. GANE.

Calamine. A fictitious product. Did not contain zinc.—E. L. PATCH.

Calcium Bromide. One lot assayed 97.08 percent and contained trace of bromate. Other lots assayed 82.45 percent, containing excess of water. U. S. P. standard 97 percent.—E. L. PATCH.

Calcium Chloride. Pure—fused. Alkaline reaction.—E. L. PATCH.

Calcium Phosphate Praecip. U. S. P. Labeled U. S. P. Chloride 2 percent did contain 3.1 percent. Other lots contained 0.22 percent, 0.33 percent, 3.9 percent, 2 percent.—E. L. PATCH.

Camphor. Specific rotation varies from 41° to 43°, showing that the amount of adhering oil varies.—W. L. SCOVILLE.

Ceresin. Varies in melting point from 58° to 65°.—W. L. SCOVILLE.

[1] It is probable that most of these samples represent but a few, perhaps only one, importation, so that the proportion stated is very misleading.—H. H. R.

Cinnamic Aldehyde. Adulterated with a mixture of three parts benzyl benzoate and one of cinnamic aldehyde.—PHARM. ERA.

Colocynth. Is still found to contain excessive quantities of seeds.—E. H. GANE.

Copper Sulphate U. S. P. Many lots contain excess of iron.—E. L. PATCH.

Cudbear. Varies greatly in coloring power and salt contents. Salt varies from 2 percent to 60 percent.—E. L. PATCH.

*Dermatol.** One lot contained 46 percent dextrine. One 36 percent bismuth subgallate and the balance potato starch, sand and clay. Another zinc oxide, gypsum, lead chromate and green sand.—DR. HUBNER.

Ether Acetic. Boils 65° to 80° C. in fractioning.—W. L. SCOVILLE.

Euphorbia Pilulifera. One lot offered consisted largely of foreign grasses. Not over one-third was genuine material.—E. H. GANE.

Flaxseed Meal. Contained following percentages of oil: 28.5 percent, 29.65 percent, 25.1 percent, 29.6 percent, 30 percent, 35.2 percent, 34.5 percent, 34.4 percent, 34 percent, 35.6 percent, 35 percent, 32.5 percent, 31 percent.—E. L. PATCH.

Fusel Oil. Is sometimes deprived of the high boiling constituents to which its usefulness is mainly due. One lot distilled over a range of 90° to 120° C. only, whereas the valuable and largest fraction should distill at 120° to 130° C.—E. H. GANE.

Gelatin. May contain Arsenic.—APOTHECARY.

Gentian Root. Should yield not over 6 percent of ash and at least 33 percent of water soluble matter. Adulterated powder is easily detected by making these determinations. Gentian for veterinary purposes is frequently adulterated. Two samples gave 2.1 percent and 4.7 percent ash and 12.6 percent and 13.9 percent water soluble matter.—E. H. GANE.

Glycerin. Still difficult to get glycerin which will not develop unpleasant odors in acid solutions. The nature of these bodies is not yet fully divulged, though it is probable that some are of an aldehydic nature.—W. L. SCOVILLE.

Guarana. Assayed 4.25 percent, 4.5 percent, 4.5 percent, 4.2 percent, 4.36 percent, 4.6 percent, 4.4 percent alkaloid. Two percent ash.

Guaiac.

	Acid No.	Ash	Insol. in alcohol
No. 1.....	117	0.6%	2.3%
No. 2.....	71.4	5.2%	19.2%
No. 3.....	75	4%	35%
No. 4.....	72.4	5%	19.3%
No. 5.....	72.4	1.6%	13%
No. 6.....	72.4	4%	20%

E. L. PATCH.

Goldenseal. Two small lots assayed 3.13 percent and 3.6 percent hydrastine.—E. H. GANE.

Hyoscyamus. Six lots assayed 0.072 percent, 0.07 percent, 0.108 percent, 0.08 percent, 0.103 percent.—E. L. PATCH.

Infusorial Earth. Contains 2 percent to 12 percent of matter soluble in weak alkaline solutions.——W. L. SCOVILLE.

*See Discussion at end of report.

Ipecac. Four lots assayed 2.07 percent, 1.79 percent, 1.83 percent, 1.82 percent. —E. H. GANE.

Iron Chloride Solution. Assays 11.46 percent, to 13.25 percent Iron.—W. L. SCOVILLE.

Iron Reduced. Assays 88.8 percent to 96.5 percent.—W. L. SCOVILLE.

Iron Sulphate Dried. One lot labeled U. S. P. assayed only 67.5 percent, $(FeSO_4)_2+3H_2O$. Other lots, 93.8 percent, 98.78 percent, 89.19 percent, 93.8 percent, 88.12 percent, 82.61 percent, 89.54 percent.—E. L. PATCH.

Jalap. Four lots assayed.

	17.4% resin	1.19% ether soluble resin
	6.92% resin	0.92% ether soluble resin
	21.08% resin	1.43% ether soluble resin
Ash 3.9%	8% resin	0.96% ether soluble resin

E. L. PATCH.

Kieselguhr.

	Color	Ignited	Water soluble	Acid water soluble	Carbonates
Lot 1	Grayish.....	7% loss	3.2%	5.6%	trace
Lot 2	Dark gray..	14% loss	1.2%	27.2%	excess
Lot 1	washed with acid water.		0.5%	1.5%	none

E. L. PATCH.

Lavender Flowers. Most of the lavender flowers have been partially exhausted of their oil.—S. K. F. Co.

Licorice Extract Powdered. 35.6 percent to 65.6 percent water soluble matter. —W. L. SCOVILLE.

Lupulin. Four lots gave:

Ash	12.92%	Ether Soluble	58.19%
"	9.46%	" "	65.6%
"	12.64%	" "	57.09%
"	12.61%	" "	44.94%

E. H. GANE.

Lycopodium. Artificial products consisting of powdered resinous substances are offered in place of the genuine for technical purposes. Some of these closely resemble the true article.—E. H. GANE.

Male Fern Extract. Adulterated with 25 percent castor oil. It contained only 8 percent crude filicin instead of 24 percent.—MERCK & Co.

Malt—Powd. Extract. Converts from 30 to 50 times its weight of potato starch.—E. L. PATCH.

Magnesium Salicylate. Ignited gives 12 percent MgO.—E. L. PATCH.

Magnesium Sulphate. Contains 0.35 percent to 0.4 percent chloride.—E. L. PATCH.

Manganese Oxide. Labeled "precipitated"—Was a black, very gritty powder partially soluble in oxalic acid solution. Was native oxide.—E. L. PATCH.

Methylene Blue.—Twenty-three samples yielded 0.04 percent to 3.67 percent ash. Less than half the number gave 0.5 percent ash or less.—W. L. SCOVILLE.

Migrainin No. 1. Eighty-four percent Antipyrine, 6 percent Citric Acid, 3.5 percent Magnes. Citrate. No. 2—50 percent Antipyrine, 40 percent Acetyl Salicylic Acid, 10 percent starch.—DR. HUBNER.

Myrrh. Runs more uniform than formerly; 32 percent to 42 percent alcohol soluble matter. One sample 64.4 percent.—W. L. SCOVILLE.

Nux Vomica. Six lots gave 1.27 percent, 1.49 percent, 1.51 percent, 1.40 percent, 1.36 percent and 1.28 percent Strychnine.—E. H. GANE. Said to be adulterated with ground olive pits. Identified microscopically. Warming with a 0.5 percent solution of paraphenylene diamine a red brown to red color is formed instead of a gray or blackish gray deposit formed with genuine nux vomica.—REPORT PHARM.

Oil Cottonseed. Samples offered as winter pressed solidified when placed in ice chest. Others did not become cloudy.—E. L. PATCH.

Oil Lavender. Is adulterated with commercial phthalic ester. It has little odor and a high ester value. A comparatively small quantity added to an oil of low ester value raises this figure considerably.—T. DELPHIN.

Oil Lemon. Is mixed with alcohol.—N. A. R. D. NOTES.

Oil Wintergreen. No reliable test has yet been published that will identify mixtures of true oil of wintergreen leaf and oil of birch with Methyl Salicylate. Some dealers claim to have such a test but they carefully refrain from giving it publicity.—E. L. PATCH.

Olibanum. Ash 20 percent, 30.5 percent, 39.5 percent.—E. L. PATCH.

Opium. Case of 220 lbs. Product did not resemble ordinary Smyrna opium. Surface was polished with no trace of ordinary wrappings. Some lumps very hard had 5 percent morphine and some only 1-10 percent.—PHARM. ERA.

Oxgall—Powd. Had 3 percent of moisture. Aqueous solution was precipitated by Alcohol. Manufacturer claimed it was purified by U. S. P. method and evaporated in vacuum drier. Unable to make a purified powder that will stand the alcohol test for purified pilular.—E. L. PATCH.

Pancreatin. None will meet the pharmacopœial milk test literally interpreted, namely, that there is no coagulation. The nitric acid with milk unacted upon by pancreatin will produce a firm coagulum or clot. After the action of pancreatin the result is a granular precipitate, not a coagulum. Fresh milk can be peptonized sufficiently for medicinal use without developing more than a slight bitter taste. If carried until decidedly bitter there is no decrease in the amount of granular precipitate.—E. L. PATCH.

Papain. Action on dried beef fibrin. One part digests:

	In Neut. Sol.	In Alk. Sol.		In Neut. Sol.	In Alk. Sol.
No. 1.....	19.5	24.2	No. 2.....	18.2	19.2
No. 3.....	15.2	24.2	No. 4.....	12.1	22.9
No. 5.....	16.4	24.2	No. 6.....	13.2	22.4
No. 7.....	16.1	21			

E. L. PATCH.

Phenacetin. Melts at 130° to 135° C.—W. L. SCOVILLE.

Pinkroot. Supplies of genuine root are now more easily obtainable, collectors evidently taking more care in gathering the drug.—E. H. GANE.

Pipsissewa. U. S. P. recognizes leaves only. All market lots consist of leaves and stems. Average proportion of leaf is 72 percent.—E. L. PATCH.

Podophyllin.

	Alc. solubility	Ash		Alc. solubility	Ash
No. 1.....	56.5%	4.3%	No. 2.....	98.7%	0.5%
No. 3.....	98.5%	———	No. 4.....	98.1%	———
No. 5.....	99%	0.4%	No. 6.....	99%	0.6%
No. 7.....	99.5%	0.3%	No. 8.....	99.7%	0.4%

E. L. PATCH.

Potassa. Assays 87.3 percent to 90.08 percent.—W. L. SCOVILLE.

Potassium Carbonate. Assays 90.4 percent to 98.35 percent.—W. L. SCOVILLE.

Potassium Nitrate. Chloride in three samples—1.55 percent, 1.55 percent, 3.1 percent.—E. L. PATCH.

Quinine Alkaloid. May contain excess of moisture. Assays 68 percent to 87 percent monohydrated quinine. U. S. P. should assay 90.5 percent.—E. L. PATCH.

Quinine Tannate. The quinine in different makes ranges from 9 percent to over 30 percent.—COUNCIL ON PHARM. & CHEM.

Red Saunders—Powd. For some unknown reason shippers wet this down before sending. It contains from 37 percent to 44 percent of water and should not reasonably have more than 5 percent to 7 percent.—E. L. PATCH.

Salophen. Adulterated with 25 percent Acetanilide.—DR. HUBNER.

Santonin. Largely adulterated with acetanilide, boric acid and borax.—AM. DRUG.

Scammony Resin. Adulterated with powdered scammony.—P. GUIGEA.

Sodium Phosphate Purified Dried. Clean and white but contained 3.56 percent of anhydrous Sodium Sulphate. Lost 1 percent of water when dried at 100° C. Another lot labeled in the same way contained 2.58 percent of sulphate. —E. L. PATCH.

Sodium Theobromine Salicylate. Substitute for Diuretin.

Lot 1 12% of theobromine instead of 40%.
Lot 2 25% of theobromine instead of 40%.
Lot 3 25% of theobromine sodium and 75% of sodium salicylate.

—DR. HUBNER.

Spirit Ammonia Arom. Four samples were all right. Forty-six samples varied from standard.—KENTUCKY STATE BOARD OF HEALTH.

Spirit of Camphor. Sixteen samples standard and fifty-one below standard.—KENTUCKY STATE BOARD OF HEALTH.

Spirit Lemon. Five samples tested from 0.1 percent of official to 45 percent. —MASS. STATE BOARD OF HEALTH.

Spirit Peppermint. Thirty-five samples assayed from 4 percent to 72 percent of official.—MASS. STATE BOARD.

Tablet Gum. Was white potato dextrin.—E. L. PATCH.

Thiocol. Adulterated with Sodium carbonate, milk sugar and magnesium sulphate.—DR. HUBNER.

Tinct. Belladonna. Ten samples ranged in extractive from 1.05 percent to 3.76 percent. In alcohol from 26.4 percent to 47.5 percent.—I. W. POLLARD.

Tinct. Digitalis. Ten samples ranged in extractive from 1.08 percent to 3.45 percent. In alcohol from 21.6 percent to 40 percent.—I. W. POLLARD.

Tinct. Hyoscyamus. Ten samples ranged in extractive from 1.04 percent to 4.27 percent. In alcohol from 23.9 to 40.3 percent.—I. W. POLLARD.

Tragacanth. Adulterated with India gum, from sterculia urens.—H. C. FULLER.

Wax. Many samples are one-half paraffin, due to the use of artificial comb or foundation.—DR. KEBLER.

Zinc Oxide. All contains a trace of lead. It is so slight that it can be easily overlooked if the solution in hydrochloric acid is much too strong in acid. If properly acidulated it will come down and can be identified by the confirmatory tests of precipitation as chromate or as sulphate. The U. S. P. digests 1 gm. in 10 cc. of diluted hydrochloric acid and 10 cc. of water until saturated, removing the undissolved portion by filtration. The amount of zinc oxide specified should always dissolve completely.—E. L. PATCH.

Florence Brand, White Seal, American Oxide. Is a fine, soft powder assaying 99.76 percent oxide of zinc but contains a trace of lead.—E. L. PATCH.

SUPPLEMENTARY REPORT.

The preceding accounts relate chiefly to drugs actually taken from the American market. The following relate to drugs offered for import, and refused admission by the Federal authorities:

Senna. At a certain season of the year, a form of India Senna known as "Monsoon Senna" is offered. This is senna from the genuine India senna plant, but gathered after the monsoon. Several lots have this year been offered which present prominent differences from the customary appearance. They are narrower, thinner, more acute, on a very slender, almost capillary rachis, of a golden-yellow color, and much inclined to be curved or hollowed out on one edge. They are also more hairy than the original form. These characters agree very well with those of *Cassia lanceolata* Forskahl, a well-known substitute or adulterant of India senna. This article is now in process of investigation.

Senna siftings, a product consisting of impurities sifted out of Alexandria senna, has been sold as senna. In this product about 75 percent usually consists of true senna leaf in fine pieces which are removed together with the impurities which represent the other 25 percent. Notwithstanding the plain nature of this case, the Government failed to convict of either adulteration or misbranding.

Strophanthus. Much less of this drug is imported than formerly, and the brown seed (S. hispidus) has nearly disappeared from the market. Recently, however, the seed of S. Eminii(?) has been offered for import, both alone and mixed with the genuine. This seed is short, rather blunt, broad and flat, the ridge inconspicuous, and of a pale or whitish color with scarcely a hint of green. Its surface is densely hairy and many of the hairs are disarranged in position, so that they project and give a shaggy or bristly appearance to the seed.

Euphorbia Pilulifera. A very large shipment of this drug was wholly spurious, doubtless by mistake, a different and closely similar species of Euphorbia having been substituted.

Powdered Drugs. The custom prevails of importing drugs like Buchu, Uva Ursi and Cubebs with the stems admixed, under such names as "Buchu with stems," and then powdering all together and selling as the straight article.

The presence of olive pits in powdered drugs has ceased, at least for the time, and powdered drugs are much more generally pure than formerly.

Gentian. There is a tendency for this (and also Jalap, Inula, etc.) to be dried by an excessive degree of artificial heat, so as to develop a distinct odor of scorching. Jalap is not essentially injured thereby, but the constituents of Gentian and Inula are apt to suffer seriously.

Ergot. This whole subject is in a deplorable condition. Most of the importations of the year have been seriously below grade and the standards of the Pharmacopœia require complete and radical revision.

Correlation of the Pharmacopoeia With the Law. This subject also requires radical and thorough action by the Revision Committee. A separate study is being made for discussion at the Denver meeting.

Belladonna. Belladonna leaves have this year been much subject to adulteration with the leaves and tops of Phytolacca, an impurity which is peculiarly difficult of detection.

Recently the adulteration of the root with phytolacca has reappeared.

Rhubarb. This still continues to arrive with hollow or blackish centers, the result of incompletely drying by artificial heat and then leaving the damp central portion to ferment and decay. No test has been devised for detecting this defect in the powdered drug. It seems to respond even better than sound roots to the tests at present in use.

Pareira. Large shipments heavily mixed with stem pieces have been offered.

Ipecac. During the year much of that offered has been called "Panama Ipecac," and has passed for the Carthagena article. There are, however, some slight differences from the latter and the botanical origin of this form is a decidedly interesting problem.

Calamus. Much more of the natural or unpeeled drug, that which ought to be used, is arriving than formerly.

Arnica Root. This drug continues to be much adulterated.

Spigelia. The continued substitution and admixture of spurious roots appears to be due rather to error than intent. It is useless to attempt its determination in any other way than by powdering and examining with a microscope.

Apocynum. No one yet knows which species ought to be used, nor how to identify it if he did.

Berberis. The same may be said of this as of the last.

Aconite. Evidence accumulates that the roots which have been partially exhausted of their starch by the growth of the stem and thus hollow or shrivelled, are richer in alkaloid.

Much "Spanish Aconite" has been offered. It is extremely difficult to determine the species that yield aconite by an examination of the roots, with suffi-

cient certainty. This form is always low in alkaloid and is probably a different species from the official.

Red Cinchona. Most of that sold is not genuine, being either a hybrid bark, with some succirubra parentage, or, ordinary yellow chip bark.

Granatum. There is not a question that the root bark is much richer in alkaloid than the stem bark and their promiscuous sale in indefinite mixtures, should not be tolerated.

Coto. No genuine coto or paracoto has been offered during the year.

Thyme. Various species of Origanum continue to be imported as thyme, the flavor being practically the same.

Marrubium. A large amount which consisted chiefly of Ballota was rejected

Crocus. Under the stimulating influence of rigid enforcement of the standards, an almost marvelous change has occurred in the character of this drug, which is now almost invariably genuine and pure, whereas formerly it was mostly sophisticated.

Matico. The importation of the genuine leaf has been re-established.

Salvia. This drug has to be carefully watched. Several species other than the genuine closely resemble it and are largely offered in late summer.

Buchu. The high price of this article continues to tempt the addition of excessive amounts of stem, sand, etc.

Proprietary articles which are supposed to contain it appear frequently to be made up without it, or with so little that it is utterly ineffective.

Anise. Great quantities containing much weed seed, gravel and pellets of dirt arrive. The ash test should be rigidly applied.

Black Mustard. Large quantities arrive that contain admixtures of colza, rape, charlock, etc., and a good deal is more or less mouldy.

Cardamom Seeds. Nearly all the decorticated cardamom seed is adulterated with spurious seed, the usual amount being about 50 percent. Rigid exclusion of such importations having been practiced, the pure seed is beginning to be offered, though of course at a much higher price.

Aloes. There has been a great improvement in the quality of the Socotrine variety. Moka or Stinking aloes, so abundant last year, has ceased to come and a fine quality is being imported.

Benzoin. The quality of this drug has deteriorated during recent years, the amounts of vegetable impurities being so great as to show clearly that they have been intentionally added.

H. H. RUSBY.

DISCUSSION.

Dr. H. H. Rusby, New York, asked one correction, which he thought had been made before sending in the report, but which had escaped his notice: It had been stated that more than two-thirds of the samples of belladonna leaves were adulterated with ailanthus. This was true in a certain sense, but it was misleading. For instance, if a very large lot of the drug was sold in London, and got into the hands of a number of different people, when the collector went around and gathered his samples of different dealers, he was really getting samples of that same original lot, and not of different lots. In his opinion, there was nothing like two-thirds of the belladonna leaves imported adulterated, nor one-tenth adulterated, with ailanthus.

Prof. W. A. Puckner, Chicago, said the committee in their report had used the trade-

mark names "dermatol," "thiocol" and "migrainin," controlled by certain firms, and indicated that they were adulterated in different ways. It seemed to him rather remarkable, if true, and highly unethical, that a firm putting out dermatol should at the same time adulterate it in several different ways. He imagined that the terms were used rather loosely, and possibly there were substitutes on the market. Dermatol was the trade-mark name for bismuth subgallate, and he imagined that the different products referred to were not really dermatol.

F. T. Gordon, Philadelphia, thought that in reporting on dermatol, bismuth subgallate was probably intended, as the report seemed to indicate that bismuth subgallate was the subject of investigation.

Dr. J. M. Francis, Detroit, asked what was the title of the report, and the Chair answered that this was the report of the Committee on Drug Market.

Dr. Francis said he did not believe the report was a correct indication of the condition of the drug market. For instance, if a report should be received, based on the work of some statistician, stating that there were a certain number of horse-thieves in Iowa, so many in Idaho, and so many in Tennessee and New York, and a certain number of murders committed in different states, and all were dumped together in one report, a visitor from Mars or some other planet might conclude that this was a terribly wicked world—because of the total absence of proportion. Listening to this report, a man unacquainted with drug conditions in the United States would suppose that the people in this country were suffering from a lamentable state of affairs, and that the trade in crude drugs was absolutely rotten. As a report showing how things were sophisticated, it was interesting, but as a paper showing any true idea of the proportion of drugs sophisticated to pure drugs it was absolutely worthless. Dr. Francis said he wanted to go on record as saying, first, that the pharmacists of the United States were enjoying the use of as pure a line of drugs as were used by any civilized nation in the world; and, secondly, that the conditions in the United States drug market today were better than ever before in this country. He believed Dr. Rusby, who was at the head of drug imports at the port of New York, would bear him out in this statement. He did not mean to say that there were no sophistications, and did not mean to say that there was not ample room for reform and improvement; but he did want to state that the druggists of this country had as good drugs on the average as they had anywhere in the world, and that the conditions were improving, and were better than they were five years ago, or perhaps even two years ago. Because of the lack of any statement of proportion, he thought this report was liable to produce a false impression.

Dr. Rusby stated that the real intent of the report was to call attention to certain forms of adulteration that had been seen, and that there was not the slightest intention in this report to show the proportion of adulteration. He was glad Dr. Francis had brought this matter up, but he was compelled to say that conditions were not quite so ideal as Dr. Francis seemed to think. Recently, a drug miller in New York had informed him that he had been asked to bid on several carloads of powdered drugs, but did not do it, because he would be underbid by people in certain cities in parts of the country nearer to the setting sun than New York, and these people would supply these powdered drugs at lower prices than he was able to purchase them for. Dr. Rusby said that when people in trade could not bid against others under such conditions as these, he was satisfied that "something was going on"—though conditions were better than they were. The idea was to keep right at it, and not let up on these things. It must be remembered that there were people who worked systematically, especially in the matter of powdered drugs, to furnish an adulterated article.

Dr. Albert Schneider, San Francisco, replying to Dr. Francis, agreed that the report was possibly misleading as to percentage of adulterations; but it was not possible to get actual percentages of adulteration. In the section he came from, the West, where he had done his work, the percentage of adulteration of vegetable drugs and powdered drugs, was not far from 50. That did not indicate an ideal condition, to his mind. Nor did he think that conditions had improved at the present time. He had occasion to examine a number of spices in his state laboratory, and upon opening a container labeled pepper of standard quality, he had examined it under the microscope and found it to contain 80 percent of

ground olive pits. It was a "scientific combination," with the odor of black pepper, and a small amount of capsicum added to give it pungency.

Another case Dr. Schneider told of was that of an examination of some samples of supposed Banda mace for a wholesale spice house in San Francisco. The first sample of mace examined was found to contain about 25 percent of Bombay mace. This was reported to the house, and they became indignant, claiming that they imported only mace of the first quality. They requested a re-examination, and it was again reported that Bombay mace was present. He was finally given a sample of the crude article, from which they declared they had made their powdered mace. This was examined and found to be genuine, first-quality Banda mace. The trouble was finally located, and it was found that they had imported the genuine Banda mace, but before it was shipped to San Francisco it was placed in the hands of a miller in New York City to rough-grind it, and this miller had taken out a certain percentage of the crude Banda mace and substituted the inferior Bombay mace.

A third instance was that of maté. Dr. Schneider said he did not recall a single sample of genuine maté having been in the state laboratory. The samples they had under investigation were highly adulterated, and in some instances contained only a small amount of maté, and in others no trace of it, the substitute being a common variety of mallow leaves. The house sent various samples of maté, which they said they imported through the port of San Francisco. During a recent visit to New York, he had found considerable quantities of the genuine maté, and he had reported to this house that the genuine article was imported and could be had. Only a few days ago he had received another sample of the powdered article for examination, and found it to contain 80 or 90 percent of mallow leaves.

Dr. Francis called attention to the fact that the two gentlemen most severely criticising American drugs were both pharmacologists and botanists, one located at the port of New York and the other at the port of San Francisco. He asked if the opinions expressed referred to the drugs that were commonly ground and sold by the American millers, or to drugs shipped in from other countries that they had turned back.

Dr. Rusby replied that he spoke of certain lots that were received, but nevertheless to a considerable amount. Dr. Francis had told him this morning that nearly all the lupulin had too much sand in it, and showed too much ash. Nearly all this drug that came into New York was free from sand—a good article. Yet when the druggist tried to get it, he had difficulty. The trouble was, that the brewers picked up all the good lupulin, and when there was a large importation so poor that the brewers would not have it, it was pushed onto the retail druggists.

The Chairman said he believed that the point Dr. Francis made concerning this report was well taken, in so far as it was entitled a report of the Committee on Drug Market. He believed that it would carry the idea that this was a report of the condition of the drug market, whereas the report showed that it was a report on adulterated lots of drugs. There were a great many good lots of drugs, of course, of which no mention was made. Mention was made of a few drugs of this class, but that made the report, if anything, still further misleading. This report covered not only drugs, but chemicals, which latter, as a general thing, he had not found to be adulterated, in his personal experience, or that the quality of chemicals was, as a rule, low. He had known of just such instances as were reported by the committee, but they were greatly in the minority. He thought it might not be out of place to have a paragraph in the report explaining the fact that the committee was not trying to give the proportion of adulterated to genuine drugs.

Dr. Rusby said that as the one representative of that committee present, he would assume the authority to make such a change in the report, as he thought it should be made.

Charles E. Vanderkleed, Collingswood, N. J., said he thought the objection was to the name of the committee. If the title of the committee was changed to "Committee on Adulterations," it would exactly cover the field that the committee worked in. If the committee did not consider it was its function to report on the relative proportions of adulterated drugs and chemicals to those of good qualities on the market, he thought it would be well to change the name of the committee as indicated, thus avoiding any misunderstanding as to its function.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

BUSINESS AND THE OPIUM TRAFFIC.

G. H. P. LICHTHARDT, PH. G., SACRAMENTO, CALIF.

"If opium were taxed $5 per pound, smuggling would cease and the Government would obtain a large revenue," said U. S. Customs Surveyor Duncan E. McKinley yesterday in discussing the matter.

"It is impossible under the present conditions to prevent the smuggling of opium at this port. It would require about 100 men to guard properly one of those big China steamers."

"Opium in large quantities also is being brought into this city by railway from Mexico, hidden in consignments of merchandise and the baggage of passengers. There is no reward for the informer and therefore no incentive for any one to cooperate with the authorities. Hence I believe in the levying of a duty on the drug."

The above is a quotation from an article which appeared in a recent Sacramento paper under the title "Stop Smuggling by Taxing Opium."

Here we have isolated the germ which is causing the malignant growth of the traffic in human lives and the souls of men, through the use and abuse of narcotics. What is the use of a state like California spending large sums of money, through the Board of Pharmacy, in trying to abate this scourge when a U. S. Customs Suveyor advocates such sentiments as expressed in the above interview.

"The Government would obtain a large revenue." Yes, and so would the people who would debase the weak and unfortunate through the sale of the opium to the slaves of the drug.

This is where the restrictions in the sale and importation of narcotics hits the hardest, not only in the United States, but in every country on the globe; this is the same old cry that is heard when any reform for the wellbeing of the people is advocated, this shout from the cold-blooded commercial system of the world, "It hurts business."

It is this phase of the narcotic situation that has come most strongly to my notice, for my official duties bring me in contact with it from every angle. Often a physician has reported to me that a patient of his is receiving treatment for a narcotic habit from a so-called doctor in some other state, and upon examing the remedial agent sent we find it to be essentially a solution of morphine or other habit-forming drug. We cannot stop this importation into our state, all that we can do is to arrest the user when the narcotic is found in his possession,

for in California it is against the law for any one except a licensed physician, dentist or veterinary surgeon to have such drugs in his possession.

Are we, as representatives of an ancient and noble profession, going to allow this blot upon our calling to remain? Or are we going to fight commercialism and see that those who are engaged in this terrible business are placed where they belong, and that our country does not sanction the traffic by imposing a duty upon smoking opium, even if it takes a thousand men to inspect a China steamer or to inspect all of the consignments of merchandise, or the baggage of passengers from Mexico?

DISCUSSION.

Mr. Lichthardt said that California had at The Hague Opium Conference one of the three commissioners appointed to represent the United States, and he wished that the members would read some of the speeches made at that Conference by the representatives of the large countries. There was one representative who said it was necessary to feed opium to certain people because they demanded it; and yet, on reading between the lines, it was evident that the purpose was to keep these people in subjugation. The reason for the existence of the narcotic evil was because there was money in it for some people. The whole Pacific Coast was confronted with this great narcotic question. Not only was it the opium question, but they had a lot of Hindus there who carried their hasheesh in their turbans, or had it in sticks and put it under their lips, or snuffed it to produce cannabis indica intoxication. He had brought this question up three years ago before at this Association, but it wasn't considered big enough to engage its attention. Since then, Italy and Portugal had brought it before this Opium Conference in Holland. He expressed his conviction that the place to stop these things was at the start, instead of trying to stop the flood when the dam was broken.

Mr. Charles J. Clayton, of Denver, gave it as his opinion that the placing of a tax upon the handling of an article as a restrictive measure for the sale of it was a fallacious procedure. When a man had imposed upon him a tax for the sale of liquor, for instance, if he had no desire to sell liquor before, he now felt the necessity of getting back the money he had paid as a tax. Should a tax be placed upon the sale of opium, there would be all the more inducement for those who smuggled opium to avoid the tax, because they could make a larger profit thereby.

Mr. F. T. Gordon, of Philadelphia, responding to Mr. Lichthardt's remarks in regard to the motive for the sale of opium, said that the Government of India drew a large part of its revenues from the tax on opium. It was a matter of history that England went to war with China back in the fifties to force China to open her ports to the opium traffic. England claimed that large parts of India were dependent upon the cultivation of the poppy plant as the sole means of livelihood and support; but the motive of the government officials was to get that tax from opium.

China, he said, was doing her best to stop the traffic. He knew from personal information that large tracts of land formerly used for cultivating the opium poppy were now used for ordinary cultivation, and that the stoppage had caused real distress among the agricultural population. The real "nigger in the woodpile" was the desire of the Indian Government to continue the cultivation of opium because of the revenue derived from it.

Mr. Thomas F. Main, of New York, remarked that Mr. Gordon was relating ancient history, and that today Great Britain was a member of The Hague Conference and had joined the other nations most heartily in the effort to abate the opium traffic.

Dr. Albert Schneider, of San Francisco, said that among his friends in San Francisco was one Lung Ko Chu, a Chinese editor, who had made a trip to China not long ago, and on his return called on him and said: "You understand that the Chinese nation has about succeeded in getting rid of the opium habit," but added that, in Northern China, the American Tobacco Trust had sent a small army of young men, who were instructed to distribute cigarettes free of cost to the Chinese people. The method was somewhat as follows:

A young man assigned to a certain town or district would go to a street-corner, light a cigarette and begin to smoke. Pretty soon a crowd of men, women and children would gather around, and he would hand out the cigarettes to them; and it was proving a very simple method of teaching the Chinese the cigarette-smoking habit as a substitute for the opium habit.

Dr. Schneider said this had struck him as being a highly contemptible practice, and the American nation and the British government were placed in the inconsistent attitude before the world of doing all they could at the Opium Conference to stamp out the opium habit, while at the same time they were doing nothing whatever to prevent the introduction of a new habit equally as bad. This situation was accentuated from the fact that, as his Chinese friend had told him, while the American Tobacco Trust had established three large cigarette-factories to supply the Northern-China field, they were doing nothing at all in Southern China, for the simple reason that that territory had been turned over to the British manufacturers, who had full possession of it and were making cigarette-smokers of the Chinese in that great division of the Celestial Empire. Lung Ko Chu had told him that one of the first things that happened upon his arrival in China was to have offered to him some cigarettes, with the statement that it was now the custom of all the officers and officials of China to smoke them.

Mr. Lichthardt said the statesment had been made at his State Association in June by Mr. Finger, their official representative at The Hague Conference, that the Germans had contended that codeine was not a habit-forming drug, and he had requested him when he met the pharmacists of other States to make inquiry if they knew of any real case of codeine habit, and if so, to communicate with him, as he was very much interested in this subject. The question had come up in connection with antikamnia and codeine tablets, and it had been claimed it was an antikamnia and not a codeine habit that was formed.

Prof. W. C. Anderson, of Brooklyn, asked Mr. Lichthardt if it was to be understood that he was in favor of the anti-narcotic legislation proposed at Washington.

Mr. Lichthardt replied that he was not, but had referred to it because it was the first thing that came into his mind. He was satisfied, however, that it contained a lot of things that were bad. He said he would like to see the American Pharmaceutical Association go on record—if it had not already done so—as favoring some kind of restriction of this traffic. There was a little logging train that came into the State of California once a week with this "dope," and he was heartily in favor of some law that would make it a crime to ship narcotics into a State in that way. The figures as to narcotics imported into the United States annually ran into tons as to opium, and thousands of pounds as to cocaine, morphine and the like. Only one or two percent of this large amount was used for legitimate purposes.

Prof. Anderson said his reason for asking the question was that the writer had stated that numerous laws had been proposed restricting the sale of narcotics, and that they had been opposed, because there was money in the traffic. No retail pharmacist of this Association had a right to say that, because the American Pharmaceutical Association, the National Association of Retail Druggists, the State Associations and the Local Associations had all opposed the bill that had been pending in Washington, therefore the retail pharmacists of the country were opposed to the restriction of this traffic. He wanted the retail trade distinctly placed on record as being in favor of the restriction of the sale of narcotic drugs, and declared that there was no body of men that had worked harder for its proper restriction than the retail druggists. They had sacrificed their commercial interests time and time again for the welfare of the public, and would continue to do it. They did, however, protest against the enactment of laws that placed upon them a tax without any effect, and that was just what the laws proposed would do, impose a tax and make restrictions that could not be complied with, making the retail druggist a law-breaker and a criminal, when in purpose and in every sense of justice and honor he stood in the opposite attitude and for the protection of the public in every instance.

Mr. Charles M. Woodruff, of Detroit, said he did not know about what had been smuggled in, but the Commissioner of Internal Revenue had directed the attention of his house to

the fact that since the importation of opium for smoking purposes had been forbidden, the solid extract of opium had begun to be used as a substitute. They had looked over their record of sales for several years back without finding any evidence of that fact, but nevertheless they wrote the Commissioner they would discontinue the sale of solid extract of opium for any purpose, and would inform their branches and salesmen that it had been taken from their list and would not appear in future. He understood that other pharmaceutical houses had followed the same course. The indications were, therefore, that the prohibition of opium for smoking purposes had been effective.

With reference to pending legislation, Mr. Woodruff said that he had opposed the Foster Bill before the Committee on Ways and Means on behalf of six of the large pharmaceutical manufacturers. He opposed it, not because his people were opposed to some reasonable and effective legislation, but for the reason mentioned by Prof. Anderson, that it would impose heavy burdens on the drug trade without restricting the traffic.

He had placed his Association on record, as he had authority to do, as in favor of national legislation to prevent the practical nullification of State police laws by the natural operation of interstate commerce. He held that the States had ample police power to regulate the intrastate traffic in narcotic drugs. The State laws lacked uniformity, however, and were defeated in a large measure by the fact that a citizen of one State could buy from one in another State under practically no restriction except as related to the Postal Laws. It was unlawful now for anyone not a manufacturer or dealer to mail cocaine or any other thing of like character into another State, except to another manufacturer of drugs, a physician or druggist; but that did not restrict the sending of these articles by express or other means of transportation. Mr. Woodruff concluded by saying that he thought the drug trade was a unit upon the necessity of reasonable and effective national opium legislation.

Mr. F. H. Freericks, of Cincinnati, said he did not understand the gentleman from California to say it was the druggist who was at fault with reference to the narcotic evil. He thought he was correct in stating that he had in mind the indiscriminate traffic from other sources, and he believed it was due him that this be stated.

Mr. Lichthardt replied that if any part of his paper could be construed to put the American Pharmaceutical Association in the wrong light, he would be only too glad to strike it out. He knew from experience in his own State that it was not the druggists who were doing these things, but somebody else. He disavowed any purpose of reflecting upon the pharmacists of the United States.

A MEDICINAL PLANT GARDEN A VALUABLE ADJUNCT TO A COLLEGE OF PHARMACY.

FREDERICK J. WULLING, MINNEAPOLIS, MINN.

The fact that the College of Pharmacy of the University of Minnesota, when it was organized in 1892, asked and received authority from the University regents to establish a medicinal plant garden for research and instructional purposes, evidenced on part of the faculty a recognition of the importance of a medicinal plant garden as an integral part of the equipment of a college of pharmacy. Although the garden was not begun until a few years afterward, and then soon abandoned because of its distance from the college (it was made part of the garden adjoining my residence) and because of lack of both the necessary ground and funds, the desirability and even necessity of such a garden was never out of the mind of the faculty, and continued to be a part of my

administration policy for development as soon as the regents could be convinced of the need of such an adjunct to the college. The conviction on the part of the regents came before their ability to provide the necessary funds, but finally patience and perseverance were rewarded two years ago, when it was found possible to provide the college with sufficient money to begin a new garden on a fairly large and representative scale. The garden, on which up to the present about $2500 have been expended, exclusive of site and salaries, has now been in operation for nearly two years, and although by no means complete, is firmly established and of proven value as an indispensable addition to the instructural facilities of the college. A plant laboratory to amplify the value of the garden has been authorized, and is now under construction. The walls of a substantial building, 32x61 feet in dimensions, adjoining the main college building, are now being reduced to a level of about six feet from the ground, and upon these a superstructure of steel and glass is to be erected at a cost of about $5000. The interior structural and other fixtures will soon be decided upon, and will be of the very latest and most suitable pattern. Before the current year is gone an expenditure of around $10,000 will have been incurred for the garden and plant laboratory. I mention this only to emphasize the two facts that the faculty and regents are in earnest in backing up their conviction that such a garden and plant-house are desirable and necessary additions to an institution teaching pharmacy, and that to provide such additions of a sufficiently comprehensive and representative character costs money. This paper is designed to point out in what ways such additions are valuable and necessary in the conduct of a good pharmacy course.

I have asked Professor Newcomb, to whose agricultural knowledge applied to medicinal plant culture much of the success of the garden is due, to give me a statement suitable to embody in this paper, and much that follows is taken from the professor's statement, for which I wish to give him full credit.

With a sufficiently equipped medicinal plant garden at the disposal of the instructional force, the first year's work on the fundamental principles of morphology, plant physiology, ecology and systematic botany, can be carried on to a much greater degree of success to the pharmacy student by a study of medicinal plants rather than by the study of the ordinary house or ornamental plants. In these latter the student has little interest primarily because they are not directly associated with pharmacy and medicine.

The study of external morphology and systematic botany may be taken up early in the fall when abundant material is available for giving instruction pertaining to the different types of flowers, leaves, roots, etc. Our students work directly in the garden, observing, making notes and collecting material which is taken to the laboratory for drawings and additional notes.

By having the plants arranged in the garden as far as possible according to families, with the ascending and descending families adjoining, the characteristics of the more important families soon become impressed upon the students' minds and further systematic work is facilitated. Of course, this plan cannot always be carried out to complete satisfaction, because many plants of similar botanical characteristics require widely different cultural conditions. It is probably not necessary to name the specific plants most suitable for this arrangement, but

prominent positions in the garden and in the work should be given to the important medicinal plants belonging to the filicales, scrophularinea, solanaceae, ranunculaceae, umbelliferae, cruciferae, compositae, etc. A few plants representing the euphoribiaceae, cactaceae, araceae and other botanical groups of more or less medicinal importance are of value in giving students a broader conception of plant groups.

Attention may be given to plant physiology as soon as cold weather stops outside work. The plants can then be potted and taken in from the garden or grown in the plant laboratory. Sufficient of these can be provided so that individual students or small groups may work independently on respiration, transpi-

MEDICINAL PLANT GARDEN, COLLEGE OF PHARMACY, UNIVERSITY OF MINNESOTA, LOOKING NORTH.

Showing (1) Digitalis purpurea, (2) Gossypium herbaceum, (3) Aconitum spec., (4) Delphinium consolida, (5) Carthamus tinctoria, (6) Digitalis purpurea rosea, (7) Datura metelloides, (8) Matricaria spec., (9) Atropa Balladonna.

ration, root-pressure, photo-synthesis, etc. For this work the following plants from our own garden have been used successfully: Datura stramonium, eucalyptus globulus, cucurbita pepo, sinapis alba, scilla and atropa belladonna. Many others might be used or substituted.

A sufficient number and variety of plants can be potted to supply histological material. This latter work may continue until spring.

The major work in pharmacognosy proper may be done during the second and

third years, but drugs from the cryptogams can be studied at the time the lower plant groups are taken up botanically. Our students work with plants yielding some of these latter drugs, such as aspidium.

The collecting, drying and preparing of a few drugs may be included in the first year's work.

For the advanced work in pharmacognosy it has seemed well here to adopt a plan which directs attention mainly to the more important plants and drugs during the past year. At least five plants of the annuals or biennials were available for each student, and of the perennials, such as rheum. spec., or of the shrubs, such as viburnum opulus, one plant sufficed for a number of students.

MEDICINAL PLANT GARDEN, COLLEGE OF PHARMACY, UNIVERSITY OF MINNESOTA, NORTHEAST VIEW.

Showing (1) Hedge of Rhamnus cathartica and Ricinus, (2) Conium maculatum, (3) Digitalis, (4) Brassica nigra and Sinapis alba, (5) Rheum spec., (6) Cannabis gigantea, (7) Coriandrum sativum, (8) Capsicum spec., (9) Calendula officinalis, (10) Datura metelloides, (11) Nicotina Tabacum, (12) Atropa Belladonna.

Each student collected a quantity of the material representing the drug and potted one or more plants. He then took this material to his desk in the laboratory, where it was submitted to a rather thorough study, along with commercial samples of the drug supplied by the market. During the winter outside work was, of course, discontinued, and previously potted plants were used. This extended work on the important drugs covered quite fully the outline for the study of drugs as presented by Tschirch. The order of study naturally depends

upon the condition and development of the plants. During the past year the appended order followed here by Prof. Newcomb has proven very satisfactory:

1. Name of the drug—synonyms—etymology.
2. Name of the plant—synonyms—etymology.
3. Systematic position of the plant.
4. Systematic morphological description of the plant (drawings).
5. Occurrence and propagation of the plant.
6. (Event) Culture of the plant—effect of cultivation.
7. Production of the drug—collection and preparation.
8. Commercial channels.
9. Commercial varieties—methods of packing.
10. Description of the commercial drug, including a comparison with the material from the garden:
    (a) Morphological description.
    (b) Anatomical description.
    (c) Odor and taste.
11. Admixture and adulteration.
12. Tests and valuation.
13. Similar or parallel drugs.
14. History (if time permits).
15. Review, consisting of a set of home-study questions.

The living plant specimens play a very important part throughout the whole study, serving to elucidate the various characteristics so that they are impressed upon the student as can be done in no other way. The drugs prepared by the students are preserved with the commercial samples in special pharmacognosy trays. Frequent sight identification tests are conducted, not only upon the drugs, but also upon the plants. Free use is made of charts, models, permanent slides, etc., as would be done without the garden.

During the last two springs, students took great interest in planting and watching the growth, among others, of coriandrum, foeniculum, brassica, conium, datura, ricinus, etc., and some of this work is required of each student. Field trips are a part of the required course, and on these occasions students collect and bring in to the garden various medicinal plants, where they are conserved for further study.

So great does the interest in the garden become that it is not uncommon to see many of the students voluntarily at work studying the plants or assisting with the care of the garden.

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

CATAPLASM OF KAOLIN.

S. K. SASS, CHICAGO.

This preparation, much prescribed by physicians, and used extensively in some sections of the country, appears to many pharmacists too difficult to prepare on a small scale in the laboratory of a retail pharmacy.

The fact is, that Cataplasm of Kaolin can be prepared in your own laboratory without too much labor, and for about one-half the price you pay for it when buying from some manufacturing house at their lowest price.

Having eight years of practical experience in making it, I feel it is my duty to inform my fellow pharmacists of the knowledge resulting from this experience, and to give the simple mode by which Cataplasm of Kaolin is prepared in my store.

It may be interesting to mention how I gained this valuable knowledge. While clerking, I received a prescription one day calling for "Pasta Kaolin ℥vi." Having never heard of such a thing, I referred it to my principal, who directed me to weigh equal parts of Fuller's Earth and Petrolatum and then mix together. After about 45 minutes "Pasta Kaolin" was dispensed.

A few days later another such prescription came in, giving me a chance for a good sweat-bath on a Sunday night. But unfortunately the started exercise was interrupted by the appearance of the writer of the prescription, who informed me that "Pasta Kaolin" should be prepared from pure Kaolin and Glycerin, and that it is impossible to do this by hand, because herculean strength would be required to make a paste of proper consistency. He also said that he was not particular as to where, or by whom this "paste" was produced, and to dispense whichever we had on hand.

As the proprietor of this store did not permit any experimentation and waste of time, the long wished for opportunity to try my strength came when I was engaged to manage a little store owned by a physician, who used a considerable amount of that original "mud." My first experiment consisted of mixing in a mortar one pound of pure Kaolin and Glycerin, adding the Glycerin gradually to the proper consistency. After a short time I was convinced that without possessing herculean strength, I could produce satisfactory "Pasta Kaolin." At my first chance I presented my preparation, together with the formula according to which I prepared, to the doctor-proprietor and asked him to give it a fair trial.

The doctor informed me that I had omitted one important ingredient—Iodine. As I was doubtful about his claim, he attempted to prove to me that his state-

ment was correct, but the starch test failed to indicate any free Iodine present in the original product. Later I suggested the Nitric Acid and Chloroform test which did show traces of Iodine.

I promised the doctor that I would prepare "Pasta Kaolin" with Iodine, and I did. I started with three pounds of Kaolin. When the "Pasta" was finished, I added ten drops of Tr. of Iodine. The result was that ten drops of tincture was enough to give "Pasta Kaolin" a brownish tint. Taking an equal amount (5 gm.) of my preparation and of the one from Denver, I demonstrated to the doctor that mine contained about ten times as much free Iodine as the other preparation.

I will not go into detail of perfecting the process of manufacturing this preparation. I will only mention that my first apparatus consisted of a mortar, next, of a dishpan having a capacity of about four gallons and my fists, which served as mixers.

My formula for "Pasta Kaolin" was as follows:

Kaolin	1 lb.
Glycerin	fl. ℥ xss.
Oil of peppermint	drops 2
Oil of wintergreen	drops 8
Carbolic acid, 95%	drops 12

This preparation never gave me any trouble in keeping, and two physicians prescribed it whenever there was an occasion for it, and claimed good results.

As soon as the new Pharmacopœia appeared, I started to compound the Kaolin preparation according to the formula and directions found therein. The first batch was disappointing, as swelling, which was taking place slowly for some time, was noticed right after the completion. The result made me think that reaction was taking place between Boric Acid and Glycerin, as this did not happen when Boric Acid was not used. Next time I started with a smaller amount, heating the glycerin and dissolving the Boric Acid in the warm glycerin. This showed that the swelling was not so rapid, and that it had diminished considerably. This result put me in the right direction.

But as I am taking too much of your valuable time, I will tell you briefly how to prepare Cataplasm of Kaolin in your laboratory.

Most of the utensils required you will find in your own store. Procure a large candy pail or something similar, fasten a piece of board about thirty-six inches long and ten to twelve inches wide to the bottom of it by hinges, hooks or otherwise, or fasten the pail to the floor. Order from a carpenter or prepare yourself a stick thirty inches long, or longer, the longer the better, and at least one inch thick. This done, you are ready to begin the work.

Kaolin should be free of moisture. To assure yourself that it is perfectly dry, heat as directed in the Pharmacopœia. The pail, too, must be thoroughly dry. Add the Boric Acid to the Glycerin and heat to about 150° C., remove from the fire and pour into the pail, add the Kaolin and stir until it becomes a smooth mass, free of lumps. Then dissolve the Thymol in the oils and mix well with the mass. Finally add enough Glycerin to bring the Cataplasm to the proper consistency and transfer to an air-tight container.

I find it necessary to add more Glycerin than the pharmacopœial formula calls for.

Time required for making 20,000 gms. is from 45 minutes to an hour. It will be to your advantage in every way to prepare Cataplasm of Kaolin in your own laboratory, without, as I said before, much labor and for about one-half the price you pay for it when buying from a manufacturing house.

DISCUSSION.

Mr. C. A. Mayo, of New York, inquired if an ordinary domestic bread-mixer would be suitable for this purpose.

Mr. Sass said he did not think it was strong enough.

He said it was hard work to mix the paste when he attempted to do it with his fist, because when he had his arm about ten or twelve inches in the paste, he couldn't pull it out. Then, too, it required another man to hold the pan down; whereas, by having this pail fastened to a board, he simply stood on the board and mixed it very easily with the long pestle described in this paper.

WHY DO DRUGGISTS RECEIVE SO FEW PRESCRIPTIONS?

Doctor Henry Beates, president of the Pennsylvania State Medical Examining Board, at a recent meeting of the Philadelphia Branch of the Americal Pharmaceutical Association gave an answer to this question which would have raised a storm of indignant protest had it come from a druggist. Doctor Beates plainly said that one reason why the druggist does not receive more prescriptions for galenical preparations is that physicians do not know how to formulate a prescription of the proper drugs in the proper combination best suited to the patient or the conditions of the case. Furthermore he asserted that few of the present day practitioners know the exact therapeutic action of drugs, that not one in ten could tell the difference in the effect produced by an infusion of digitalis made from a fluidextract and that produced by one made from the assayed leaf, giving this as an example of the results of the lamentable lack in the study of materia medica and in a positive knowledge of drugs. Strong language this, but, coming from one with long experience in examining candidates for licensure to practice medicine in his state, he must know.

One of the chief causes assigned for the decline in the prescribing of preparations the dispensing of which would require skill and learning on the part of the druggist was the insufficient teaching of materia medica in medical colleges, this subject usually being given in the first year and promptly forgotten in the succeeding years when all of the student's time is taken up with the refinements of diagnosis, pathology, bacteriology and other modern additions to the curriculum. The graduate, it was said, could diagnose a case in the most exact manner, but when he came to prescribe the proper drug or combination of drugs for it he was all at sea and in despair would prescribe something made by somebody which he remembered to have been told was the exact remedy required. And the worst part of the situation, in the speaker's opinion, was the fact that the prescriber not only did not know what he was prescribing, but did not even know how the remedy ordered acted upon the patient, except that he got better or got worse.—*American Druggist.*

Section on Pharmacopoeias and Formularies

Papers Presented at the Sixtieth Annual Convention

THE U. S. P. AS A STEPPING STONE TO HIGHER IDEALS.

W. J. FRAZIER, WICHITA, KANSAS.

While I do not pose as a teacher of high ideals, it is my ardent desire, as a common druggist in the ranks, to lend to the advancement of the profession that I love, and to which I have endeavored to give the energies with which God has endowed me, the little influence at my command.

It will be observed at this meeting that the teachers of our schools of pharmacy are the leaders in this Association, as they should be, but it is a lamentable fact that not enough of the men behind the counters of the retail drug stores of the country are interesting themselves in the work of this Association; and for this reason, and not for any fitness I may possess to participate in this discussion today, I have accepted the invitation of the Chairman of your Committee on the United States Pharmacopœia to present a brief paper along any phase of the subject that concerns me most.

I have chosen the above subject as being self-explanatory, as well as affording an opportunity to make my remarks general. And, while there is nothing personal in what I have to say, it matters little to me where I may strike, if I can succeed in pointing out some of the defects which have crept into our profession, and in directing the thought of my colaborers to the U. S. P. as the means of removing such defects.

In my humble opinion, we are at the beginning of better days in pharmacy if we will but hold to the Pharmacopœia as our "rule and guide" for work, instead of shouting "ham sandwiches, hot tamales, oyster cocktails, post cards, postage stamps," and the many other things which degrade our high calling.

If we will but study the needs of the physician, and help him to see the advantage of familiarizing himself with the standard preparations of the U. S. P., and show by our manner of conducting business that we are not mere vendors of patent medicines, soda water, and sandwiches, but are men of his own class professionally, who have at heart the welfare of the sick the same as himself, our increase in prosperity will be both sure and speedy.

Now to show ourselves worthy of this confidence we must, first of all, see to it that the rule and guide by which we work is the very best standard that can be set up, then there can be no question as to our "ideal."

I believe that the U. S. P. could be improved by making some of its formulas more explicit. For example, take that of so simple a preparation as Essence of Peppermint. The average druggist will use the oil of peppermint which he

happens to have in stock, and which is often very inferior in quality; since the druggist when purchasing from his jobber frequently fails to insist upon being supplied with standard U. S. P. drugs only, and buys the cheapest grades offered.

It is true that the pharmacist should know that the oil to be used in the preparation mentioned should be in accordance with pharmacopœial requirements, but he does not stop to think. In this formula, the name of the oil should be followed by the legend "U. S. P." which would cause the conscientious pharmacist to study the label on the container to ascertain whether or not the article was up to the standard. This precautionary method should be used in every formula where there is a possibility of such oversight.

Another example is found in Tannic Acid, which title we believe should always be followed by "U. S. P." in any formula where it occurs. The writer once had an experience in trying to get a good U. S. P. tannin for prescription work. To my amazement neither of the wholesale houses of whom I was accustomed to buy had a pound of it in stock, and when our demands were persistent, they ordered it specially for us. On making investigation, we found that they always sent out the cheaper grades of this article to meet the demands of druggists for low prices.

No man ever attained a very high plane who loafed on his job. That retail druggists all over the country have been doing this goes without saying, and it is demonstrated by the fact that on the shelves of retailers may be found hundreds of dollars worth of pharmaceutical specialties which, in most cases, can be made by the retailer himself after the formulas in the U. S. P. and N. F.

It behooves us, if we are to make our calling successful, and our Pharmacopœia a useful book, to stop loafing, stop going after strange gods in things foreign to our profession, and prove ourselves worthy members of the craft. Then, and not till then, can we compel the pharmaceutical manufacturing houses, who are sapping our vitality both professionally and financially, to "sit up and take notice."

I realize, however, that the pharmaceutical manufacturers may be a useful adjunct to our profession, and can do much for us if they will treat us fairly and stop going into the patent medicine business and promulgating their patents through the physicians. This would give us a great incentive to use the Pharmacopœia faithfully, and strive to improve it in every way possible, so that the volume would grow steadily into that popularity of which it is so deserving.

The writer believes that a more exhaustive description of the properties and medicinal uses of all drugs and formulas in the Pharmacopœia would popularize it immediately, and would lead to a more frequent use of the book among druggists generally. Also, that the publication of these formulas in any other than the official manner should be prohibited, after they are adopted by the Committee of Revision. While it is true that this would make the U. S. P. very much larger and more expensive, it would greatly lessen the demand for other books containing non-official substances and formulas.

We believe, also, that it would make the book more popular with physicians if shorter names were adopted for chemical substances having titles which almost cover a page of a prescription blank, such as "hexamethylenamine tetramine." It would facilitate their being remembered by physicians and many who use this

particular chemical under trade names could soon be induced to employ the official title if it were short, but they do not care to use such needlessly long and difficult names.

Our pharmaceutical manufacturing friends have long realized the importance of this, and are putting out this same chemical under the trade names, "amino-form, cystogen, formin, urotropin," etc., and in many instances are getting not only fancy but fabulous prices for them.

ORIGIN OF SOME WELL-KNOWN MEDICINES.

Dover's powder, introduced into the "British Pharmacopœia" in 1748, was the result of the work of Thomas Dover, who was born in 1668; studied under Sydenham; practiced in Bristol in 1684. During the year of 1708, when Thomas Dover was captaining a privateer expedition, he landed in Peru, and following this his seamen became afflicted with the plague. Together, with four surgeons, he treated 180 seamen by bleeding each man 100 ounces and by using the powder. In 1742, after he had returned to London, he brought out this powder for gout, and it was called by him diaphoretic powder.

"Fowler's Solution," introduced by Tom Fowler, an apothecary, in Yorkshire, England. A proprietary medicine, named "Tasteless Ague and Fever Drops," was quite popular at that time, so Fowler analyzed it and found arsenic in it. He worked out the formula, added spirit of lavender and called the resulting preparation Fowler's Solution.

Laudanum was a name invented by Paracelsus in 1500, who applied it to an aqueous extract of poppy, which he gave in five-grain doses. Sydenham first introduced liquid laudanum, acetum opii, which continues today as the laudanum of the continent. The word paregoric was first used as an adjective, meaning to speak words of comfort, and was first used to describe an elixir. Lemort, a Leyden chemist, brought forth paregoric elixir early in the eighteenth century. Many of the older Greek and Latin physicians had paregoric elixirs.

One of the oldest known combinations is that of Hiera Picra, sometimes referred to as Hickera Pickera, or Hickory Pickory.

Hiera was applied to prescriptions in early Grecian medicine, and these contained either aloes or scammony, or both. Each physician had his own particular Hiera; Galen's consisted of aloes. The pill of aloes and myrrh was first intro duced as Rufus Hiera.

Friar's Balsam, introduced by Fridasor, a friar, first consisted of Balsam of Peru, later benzoin was substituted.

Blaud's pill, introduced by a Frenchman in 1841, consisted of iron sulphate and potassium carbonate.

Citrine ointment made its debut in 1650, and at that time consisted of lead and grease. In 1722 mercury was dissolved in nitric acid and mixed with lard. A Yorkshire physician was responsible for this.

Diachylon, meaning a precipitation of juices, was of importance, from a medico-legal viewpoint, in England, where it was used by the ignorant class to produce abortion. This ointment dates back to the time of Tiberius.—*The Jeffersonian.*

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

EARLY HISTORY OF THE COLORADO PHARMACAL ASSOCIATION.*

CHARLES J. CLAYTON, DENVER, COLO.

First of all, I will say there never was any such association as the Colorado Pharmaceutical Association. Our Association was organized in 1890 under the name of the Colorado State Pharmacal Association. I can't tell you why "pharmacal" was chosen rather than "pharmaceutical," although I remember I heard Mr. Ford argue that point in the organization meeting when they were deciding what name it should be called by. A few years later when a new Constitution and body of By-Laws were adopted, the word "State" was dropped, and it has been known for the last thirteen or fourteen years as the Colorado Pharmacal Association. It was organized in 1890. It is therefore 22 years old, and has held a meeting every year with one exception, the year 1904; during the St. Louis Exposition there was so much talk among druggists of their intention to attend that exposition, that the Executive Committee of the State Association came to the conclusion that it would not be worth while to attempt to hold a meeting that year. So there was a meeting of the Executive Committee and the officers were permitted to hold over until the next year. In that way I happened to be one of the few men who have held office as President of the Colorado Pharmacal Association for two years.

Mr. Charles M. Ford was the first President, as he was also the most active one among those who organized the Association; he held the office for two years and was again elected to that office in 1907, when the Association affairs were at low ebb and it seemed as if we had to get some new blood in to stimulate matters and bring it on its feet again.

I can recall, in thinking about it in these few minutes, the names of practically all the Presidents of the Association, but I think their names would not be familiar to you as a general thing. Among them, however, is that of Mr. E. L. Scholtz, who held the office of President two successive years. Among the other presidents have been Mr. McKenzie, whom most of you probably have met; Mr. Arcularius, of Colorado Springs; and Mr. E. G. Fine, of Boulder, who is the present presiding officer.

The first Secretary of the Association was Felix Lyneman, a graduate of the Philadelphia College of Pharmacy, who with other members of the alumni of that college, was very active in the formation of the Association. Mr. Lyne-

*Condensed from the stenographic report of Mr. Clayton's oral address.

man held the office until his death, which occurred some time about 1896, and was succeeded by Mr. Charles E. Ward, who was accustomed to attend the meetings of the American Pharmaceutical Association during the latter years of his life. Mr. Ward died about the first of November, 1906, and I was appointed by the Executive Committee to fill out his unexpired term, and held the office only until the next annual meeting of the Association, being succeeded then by Mr. A. G. Clarke, who, before he received the records of the office, met his death in an accident, and his term was finished by Mr. Frank B. Angell.

All of those whose names I have mentioned as Secretaries were Denver men. Mr. Angell was succeeded by Mr. J. C. Anderson, then of Denver, but now of Fort Morgan, who held the office for one year, and Mr. Anderson was succeeded by Mr. Frank M. Hall, also of Denver, and now deceased. I assumed the office of Secretary two years ago, in 1910, and am told that I assumed it permanently, but I have not yet given my assent to that proposition.

During the history of the Association, 22 years, we have had but four Treasurers, Mr. J. F. Fezer, who held the office for 14 years, from the time of its organization until 1904. Mr. Fezer is located at Greeley, and is still in the drug business there. Mr. S. L. Bresler held the office two years, from 1904 to 1906. Mr. S. B. Sturtevant, of Grand Junction, who was Treasurer for one year, and Mr. H. Reynolds, of Greeley, who has been Treasurer since 1907.

In connection with my remarks concerning the State Association, I might say that the Denver Pharmaceutical Association was organized some time previous to the organization of the State Association.

Until recent years, Colorado has never been very active in the American Pharmaceutical Association affairs, but if you gentlemen will notice the map that hangs in the office of the General Committee down on the first floor, you will observe that at the present time, in proportion to population, Colorado leads the United States in membership in the American Pharmaceutical Association. If you haven't all observed that map, I think you will find it interesting to look at it; Mr. Nitardy has prepared it, showing the relation of members of the American Pharmaceutical Association in the different states, to the population of those states, and Colorado leads in that percentage; California and South Dakota are in the second class and are away ahead of some of the Eastern states, and I want at this time to give full credit for Colorado's standing in the American Pharmaceutical Association to Mr. Nitardy, who has been very active since coming here, and who has personally secured the great majority of applications for membership in the Association, and was the instigator of the organization of the Denver Branch, which has now been organized some three years.

It would be very difficult, if not impossible, ever to compile a history of the Colorado Pharmacal Association that would be at all complete, for the reason that the records of the earlier years of its history, were lost in a fire that destroyed the Secretary's office, and no one has preserved the printed minutes of the meetings.

Had I known that I was to be called upon for something of this sort, I could have gotten up something more complete than I have presented you, and perhaps made it somewhat worth while hearing, and I should like to have an opportunity of doing that some time in the future.

Contributed and Selected

THE PHYSIOLOGICAL ASSAY OF ACONITE.

GEORGE B. ROTH, ANN ARBOR, MICH.

The variability of aconite preparations when tested physiologically has shown that the chemical method of assay which is required by the U. S. P., VIII, for Aconitum Napellus, is not a measure of its activity. A preparation relatively rich in total alkaloids may have a low toxicity and vice versa. Other chemical methods than the official ones, which have been recommended have upon investigation been found to be equally unreliable. For this reason a search was made for a physiological test which might be used to determine the activity of aconite.

Before the consideration of any method of assay a brief review of the chemistry and pharmacology of aconite will be given to enable one to more properly value the various assay methods that will be mentioned and discussed in this paper.

For a long time the chemistry of aconite was in dispute on account of the fact that mixtures of alkaloids rather than pure principles were isolated from the plant.

Although an amorphous alkaloid had been isolated from the leaves of Aconitum Napellus by Geiger[1] in 1833, it was not until a half century later that its chemistry became better known, the especial credit for which may be given to Wright[2] and Dunstan.[3]

Dunstan[5] described three alkaloids in aconite,* namely, aconitine, benzaconine and aconine. These have all been found in the root in varying amounts. According to Dunstan their constitution is as follows:

Aconitine (acetylbenzaconine), $C_{24}H_{37}$ (CH_3CO) (C_6H_5CO) NO_{10}.
Benzaconine, $C_{24}H_{38}$ (C_6H_5CO) NO_{10}.
Aconine, $C_{24}H_{39}NO_{10}$.

The activity of aconite depends mainly upon its most active alkaloid aconitine. This is a crystalline base which melts at about 188° C., is very sparingly soluble in water but readily soluble in alcohol. When heated to its melting point the alkaloid decomposes first into benzaconine and later into aconine. Benzaconine the product of the first stage of aconitine hydrolysis, is the chief constituent of the substances named napelline and picraconitine by the older workers. Dunstan first named it isaconitine. Benzaconine is an amorphous base, and like aconitine is very sparingly soluble in water but readily soluble in alcohol. Aconine is also an amorphous base, but is soluble in both water and alcohol. Although these alkaloids are present in the crude drug they may be present also in the

*By aconite is meant the official preparations made from the root of Aconitum Napellus.

galenicals as decomposition products. Dunstan and Umney[4] found aconite alkaloids remarkable in that they undergo decomposition easily, especially hydrolysis.

Besides these alkaloids there is considerable aconitic acid, a small amount of starch, some resin, fat, and sugar.

Aconitine, according to Cash,[5] is the most active of the alkaloids. Either to the frog (Rana temporaria) or the guinea pig, it is almost 200 times more toxic than benzaconine and about 1200 times as toxic as aconine. Upon the heart and circulation aconitine produces marked effects. In warm-blooded animals the heart is first slowed, due to a stimulation of the vagus center, and this slowing is accompanied by a great fall in blood pressure. The heart rate then increases and later becomes irregular with the development of a marked arrhythmia betweeen auricles and ventricles, the blood pressure fluctuating greatly.

Tracing of isolated frog's heart perfused with Aconitine hydrochloride.
At 2:35 p. m. Merck's Aconitine hydrochloride (1-400,000) was turned on. At 2:40 p. m. increased tonus appeared.

When applied to the tongue and mouth in dilute solutions it will produce the tingling sensation which is so characteristic of aconite.

Benzaconine in small doses causes a very slight rise in the blood pressure, and an acceleration of the heart rate, whereas with large doses a steady fall in the blood pressure occurs which is accompanied by a decrease in the heart rate. There is also developed a change in rhythm between the auricles and ventricles. No tingling is produced when applied to the tongue.

Aconine as compared with the former alkaloids is comparatively harmless. A slight rise in pressure usually occurs which is due to a more complete systole of the heart. In this respect it is antagonistic to aconitine and benzaconine. Like the latter, it does not produce tingling.

Methods of Assay Investigated. An investigation of seven methods was made: the lethal dose for frogs, one-hour frog method, the effect upon the blood pressure of the cat and the dog, the Squibb method, the reaction upon the perfused isolated frog's heart, and the lethal dose for guinea pigs.

Although frogs are so easy to obtain and handle they have never been extensively used in a method for the physiological assay of aconite. Some work has been done with this drug upon frogs by Mandelin,[6] Stevens,[7] and a few others, with unsatisfactory results. Buntzen and Mudsen[8] used them to determine the toxicity of various aconitines.

In the lethal dose method for frogs the amount of drug necessary to kill a frog of known weight is determined. This is essentially the method as used by Houghton[9] for the assay of digitalis. The aconite preparation is deprived of its alcohol by gentle heat, and then diluted with physiological salt solution so as to measure between 0.5 cc. to 1.0 cc., and then injected into the abdominal lymph sac. The frogs are injected in the latter part of the afternoon, placed under moist bell jars and allowed to remain until the next morning, when they are examined. It was usually found that when an animal was dead the body was rigid, but this was not necessarily true. The heart was examined and if stopped this was taken as an end reaction. The ventricle was usually found in systole and the auricles dilated.

This method of assay yielded very satisfactory results with some preparations, but with others very discordant results were obtained. Under these conditions it required from 0.0004 cc. to 0.004 cc. per gram of body weight of the official fluidextract to kill; 0.003 cc. to 0.004 cc. per gram of body weight, of the unofficial fluidextract of the leaves; and about 0.007 cc. per gram of body weight, of the official tincture. While in a general way this method shows the relative strengths of different preparations, it is very uncertain, inasmuch as there is a marked variation occurring in each series of animals. As an illustration, the assays of preparation "F", an official tincture, and preparation "C", an unofficial fluidextract of the leaves, will be given in full. Those marked (+) were found with the heart stopped, while the heart was beating, with those marked (—).

PREPARATION "F".	PREPARATION "C".
Dose (cc. per gram of body weight).	Dose (cc. per gram of body weight).
0.003 —	0.001 —
0.004 —	0.002 —
0.004 —	0.003 —
0.005 —	0.004 —
0.005 —	0.005 +
0.0055—	0.005 —
0.006 +	0.006 —
0.006 +	0.006 —
0.006 +	0.007 +
0.0065+	0.008 +
0.007 —	0.009 —
0.007 —	
0.008 —	
0.008 —	
0.009 +	
0.01 +	

Preparation "C" shows a degree of uniformity in the results, but the fact that the heart was beating in the animal which received the largest dose and had stopped in the animals receiving smaller doses, makes the results more of a conjecture than a fact. The solutions injected were always quite dark and con-

tained considerable resinous material, traces of which could always be found in the lymph sac when examined at the end of the time.

In general, this method yielded more promising results than did the one-hour method, and although not strictly accurate for quantitative work, yet it shows gross differences in the activity of aconite preparations.

The one-hour frog method is a heart toxic method, and is also used in the assay of digitalis. The method in detail can be found in the work of Famulener and Lyons,[10] but a short description of it will be given. As in the lethal frog method, the diluted non-alcoholic drug is injected into the abdominal lymph sac and at the end of an hour the animal is pithed and the heart is exposed and examined. No definite end reaction except cardiac standstill was required, as the heart would be found in systole in many of the animals and in diastole in many others, the latter condition predominating in a given series. The stoppage of the ventricle alone could not be taken as an end reaction, as contractions supervened occasionally in the ventricle if the auricles were beating vigorously. The beat of the sinus, however, was disregarded. A large number of animals were used, but no constant results were obtained. The following series is typical for all the preparations used:

PREPARATION "X" (an official fluidextract.)

Dose (cc. per gm. of body weight.)

(+) = heart stopped.	(—) = heart beats.
0.02 —	0.05 +
0.02 —	0.05 +
0.02 —	0.05 —
0.025—	0.05 —
0.03 —	0.05 —
0.03 +	0.06 +
0.03 —	0.06 +
0.03 —	0.06 —
0.03 —	0.06 —
0.03 —	0.07 —
0.04 +	0.07 +
0.04 —	0.07 +
0.04 —	0.09 +

Further work on this preparation had to be discontinued because of the fact that the solution was too concentrated to be absorbed properly in the time limit. For example, a 30 gm. frog which received the largest dose was given 0.27 cc. of the modified fluidextract.

If we compare this method with the lethal frog method we find that it is more unsatisfactory in many ways. The absorption is more variable, there is a less definite increase in toxicity with the increase in the size of the dose, and larger doses are required than in the lethal frog method.

One of the effects of aconite is the production of a lowered blood pressure. This fact, therefore, was investigated, with the thought in mind of its being useful as a method of assay. After sufficient trial it was found that the effect upon the blood pressure could not be used as a measure of the activity of aconite, the chief objection to it being the relatively high toxicity of the drug. The experiments were performed on both dogs and cats. The animals were anaesthetized with morphine and chloretone and were given artificial respiration.

The drug was injected into the jugular vein, the rate of injection being uniform and slow and the amount of fluid injected being constant. As an illustration of the toxicity of the drug the following protocol will be cited. In a dog with intact vagi 0.25 cc. of tincture produced only a slight fall in the blood pressure. In a few minutes marked cardiac irregularities occurred, followed by a continued fall in pressure. In order to prevent the pressure from falling further the vagi were cut, which caused the heart irregularities to disappear. About fifteen minutes later a dose of 0.5 cc. was given, which caused a slight fall in pressure but no heart irregularities. This same amount was repeated after about ten minutes, producing a marked rise in pressure, followed by irregularities and a subsequent fall in pressure. After another interim of about ten minutes another 0.5 cc. dose was given, which caused the death of the animal, death being caused by a total of 1.75 cc. of the tincture given at intervals extending over a period of about forty-five minutes. Like results were obtained in the cat, a large animal being able to survive as large amounts of the drug as did the dog. With either intact or cut vagi no constancy in the fall or rise in pressure was observed, and the conclusion was reached that this method was altogether inadequate.

When the isolated heart of the frog (Rana pipiens) is perfused with aconitine in Ringer's solution, in certain dilutions, the organ responds first by going into what might be considered a state of incomplete tetanus with a marked increase in tonus (see Fig.) Relaxation of the heart gradually becomes lessened and the systole more complete or while the organ is in a state of marked tonus no regular beat occurs but a series of irregular contractions may pass from one side to the other. It was thought that solutions might be compared quantitatively by noting the dilution just necessary to produce this phenomenon, or perhaps a comparison might be made by noting the time required to cause this effect when using the same degree of dilution of unlike preparations.

The method is as follows: A large frog is selected and after exposing the heart an inflow cannula is inserted into the left anterior caval vein and tied firmly, and in a similar manner an outflow cannula is tied into the right branch of the truncus arteriosus. After tying all the remaining vessels and freeing the organ, the cannulae are then fixed securely with an iron clamp. A small spring clamp is then attached to the tip of the ventricle and tied to a Harvard heart lever, thus enabling one to obtain a tracing. The inflow cannula is then connected to a set of perfusion bottles which are placed at a height of about 80 mm.

The fluid passing through the outflow cannula is made to pass over the heart so that the organ is kept moist. The outflow cannula is about 30 mm. long and is held nearly upright, which gives the heart a constant amount of work. Inasmuch as each heart will permit of a single experiment, thus necessitating the use of a number of animals, it is quite essential that the technic be uniform After the Ringer's solution* is turned on, the heart should beat at about the same rate as in the pithed animal.

In the following experiments Merck's aconitine hydrochloride was used.

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*Ringer's Solution: NaCl —0.6%
$CaCl_2$ —0.02%
KCl —0.0125%

Various dilutions were tested and after several trials for each dilution an average was made. The results are as tabulated below:

Dilution	Number of experiments performed	Time elapsing before appearance of increased tonus.	Average
1-200,000	4	6, 5, 4, 3 minutes	4.5 minutes
1-400,000	6	6, 10, 6, 5, 6, 5 minutes	6.3 minutes
1-600,000	6	9, 13, 23, 10, 14, 11 minutes	13.3 minutes
1-800,000	6	19, 7, 14, 18, 15, 16 minutes	14.8 minutes
1-900,000	2	23, 26 minutes	24.5 minutes

For an official tincture in 1 to 50 dilution an average of 11.6 minutes was required to produce increased tonus. With an official fluidextract in 1 to 500 dilution no typical reaction appeared, only a change in rhythm which occurred in 6 or 7 minutes. Further work with galenicals showed that not only the characteristic reaction did not appear with many preparations, but that the time for its appearance in case it did occur, showed greater variability than it did with aconitine. This may be due to the resins and other substances present in the galenicals as well as to the mixture of alkaloids.

The dilution necessary to produce this reaction was ascertained with Merck's aconitine hydrochloride and it was found to occur in as great a dilution as 1 in 2,000,000, during the months of October, November, and December, whereas it was obtained with considerable difficulty using a 1 to 800,000 dilution during the months of January, February and March. No sharp limit, as regards strength of solution, for the disappearance of this phenomenon could be determined.

This method might be useful to determine the activity of aconitines but is worthless for galenicals since the reaction is not constant when they are used.

Several decades ago Squibb[11] recommended a physiological test for the determination of the strength of aconite preparations, his endeavor being to secure some means whereby a good preparation might be known from a worthless one. At first he employed this merely as a qualitative test, but later he used it to determine the relative worth of various preparations.

This test takes for its end reaction the sensation produced on the tongue and mucous membranes of the mouth after allowing liquid preparations of the drug to remain in the mouth for a short period of time, and ascertains the dilution which is just necessary to give a distinct aconite sensation. The mouth is rinsed with distilled water, and four cubic centimeters of the required dilution, which has stood for an hour, is placed in the anterior part of the mouth and retained for one minute. After several minutes a distinct aconite impression is obtained, which, according to the test, should not amount to tingling, but should be very suggestive of it. This sensation should continue for about half an hour. As originally suggested, a fresh official fluidextract should produce the reaction in a 1 to 600 dilution.

This is perhaps the oldest physiological test for aconite and it has been investigated by a number of workers, many of whom have found it an admirable test for the quantitative estimation of the aconite preparations. In fact, it is used today by at least three drug manufacturers in conjunction with the chemical

method required by the Pharmacopoeia. What makes the method especially commendable is its simplicity, as it requires no expensive laboratory, and furthermore it can be carried out by almost any one. Lower dilutions were obtained than were supposed to be found. For example, an official fluidextract produced tingling in 1 to 375 dilution. This may have been due to the fact that distinct tingling was always required in my tests. The results of the tests will be given later.

The guinea pig test recommended by the Philadelphia Branch of the American Pharmaceutical Association[12] was given an extensive trial and yielded very satisfactory results. It is a lethal dose method and requires the determination of the minimum amount necessary to produce the death of a guinea pig within twelve hours, the dose injected being estimated per gram of body weight. This test was found to be especially delicate, the minimum lethal dose of an official fluidextract being about 0.00004 cc. per gram of body weight. It will be noticed that this amount is one-tenth of that designated in the report mentioned above.

The limits of toxicity are comparatively narrow, as will be seen from the assays below.

PREPARATION "B" (Tincture)

(+) = dead
(—) = alive

Dose (cc. per gm. of body weight.)
0.0003 —
0.00035—
0.00036—
0.00037+
0.00039+
0.0004 +
0.0005 +

PREPARATION "C" (Fluidextract.)

(+) = dead
(—) = alive

Dose (cc. per gm. of body weight.)
0.00003—
0.00004—
0.00006—
0.00008—
0.0001 —
0.00012—
0.00014—
0.00015—
0.00016+
0.00018+
0.0002 +
0.00025+

Before the further consideration of this method I shall give the results of the examination of eight samples by the three most satisfactory methods the lethal frog method, the lethal guinea pig method, and the Squibb method. The results appear in tabulated form below and are arranged according to the strength of the preparation examined, regardless of the actual ratio* which should exist between a tincture and a fluidextract.

	Lethal Frog Method		Squibb Method		Lethal Guinea Pig Method	
Preparation	Cc. per Gm.	Ratio	Dilution	Ratio	Cc. per Gm.	Ratio
A—Fluidext. Leaves.....	0.007	1	1-50	1	0.0005	1
B—Tincture	?	?	1-60	1.2	0.00037	1.3
C—Fluidextract	0.004	1.75	1-150	3	0.00016	3.1
D—Fluidext. Leaves.....	?	?	1-175	3.5	0.00009	5.5
E—Fluidext. Leaves.....	0.003	2.3	1-225	4.5	0.00009	5.5
F—Fluidextract	0.0004	17.5	1-350	7	0.00004	12.5
G—Fluidextract	?	?	1-375	7.5	0.000035	14.3
	Gm. per gm.				Gm. per gm.	
H—Merck's aconitine.....	0.00000165	4242	1-225,000	4500	0.000000123	4065

* This could be found by dividing the ratio for the fluidextract by ten.

From this table the inadequacy of the lethal frog method is seen and a degree of parallelism is noticed between the Squibb method and the lethal guinea pig method, the latter showing a higher ratio except in the case of aconitine.

In summarizing this work, we must conclude that of the methods investigated the Squibb and the lethal guinea pig methods alone can be used with any degree of accuracy. The frog methods are undoubtedly worthless. Theoretically, a blood pressure method would be equally worthless, since we know that aconite contains alkaloids which have antagonistic effects on the circulation. Practically the inefficiency of such a method has been demonstrated in this investigation. The perfusion method is seen to be much more delicate than any other for aconitine, but can not be used with success with galenicals on account of the fact that they contain all three alkaloids which have dissimilar heart effects. The relative activity of aconitines, however, could be measured by the perfusion method, using a similar dilution of unlike preparations.

Many criticisms have been urged against the Squibb method, the subjective factor being regarded as detrimental. This we believe is an objection, since we found that our results were so much lower than those of other observers. However, if the individual is standardized against a good preparation, the test can be used, and we believe it is a measure of the activity of aconite, since the tingling is produced only by the aconitine and not by the other alkaloids in the drug. The guinea pig method is the most delicate toxic method investigated and showed little or no variability. The relative non-toxicity of the aconines in aconite and the parallelism noticed between the Squibb and the guinea pig method would indicate that the latter method is practically a measure of the aconitine content in aconite. The variability in the reaction of individuals to the Squibb test would lead us to conclude that the guinea pig method should be preferred as a method of biological assay.

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FROM THE LABORATORY OF PHARMACOLOGY, UNIVERSITY OF MICHIGAN.

DEOLEATED TINCTURE OF STROPHANTHUS.

R. C. HOLMES, PH. C., PHAR. D., BROOKLYN, N. Y.

The U. S. P. Tincture of Strophanthus has long been a source of trouble to the pharmacist and manufacturer, inasmuch as the fixed oil, contained in the Kombe seeds, persists in clouding the preparation after standing a short time, or immediately upon chilling. Considerable difficulty is experienced before the tincture is fit for dispensing, repeated filtration being necessary in order to produce a clear tincture; this operation being necessary each time before filling a prescription.

The clinician's principal objections to the Tincture of Strophanthus are, that its nauseating properties, although less than those of the tincture of digitalis, produce untoward effects, and that oftentimes the preparation fails to give results.

Before the introduction of biological assay, the tincture varied from 40 to 400 percent; it can readily be seen at what point the source of unreliability lies.

Shoemaker[1] says: "With wider and more rapid dissemination of knowledge, we may hope that within a comparatively few years, we may have Strophanthus used as carefully as digitalis today." The modern methods of physiological standardization make it possible for Dr. Shoemaker's hope to become realized. The tincture of strophanthus, when standardized by modern biological assay, is an absolutely reliable preparation, which does not deteriorate. The pharmacist may replenish his stock and fill his prescriptions with a tincture invariably 100 percent active.

Therefore, we have the unreliability of Tincture of Strophanthus overcome by the introduction of biological assay. Now, if it is possible to do away with the nauseating and irritating properties, we have a preparation most desirable. Suspicion points to the fixed oil, the troublesome element, which makes the U. S. P. tincture an unsightly preparation and causes the pharmacist much inconvenience. Although it has been proven that the active principles possess certain irritating properties, it has been my purpose to prove that the fixed oil is a disturbing factor of considerable note. With this purpose in view, a series of experiments were carried out in this laboratory.

First. A U. S. P. tincture was prepared, the first percolate of about 800 cc. produced a clear alcoholic liquid, the percolate then clouded, and remained turbid in spite of repeated filtration. When the tincture was tested physiologically, it proved to possess a relative strength of 60 percent. (This particular shipment chancing to be an inferior grade of drug.)

Second. A 10 percent tincture was prepared after first completely extracting the fixed oil with pretroleum ether and percolating the deoleated drug with the U. S. P. alcoholic menstruum. A crystal clear tincture resulted, which remained clear after standing several weeks and after cooling to 0° C. The tincture, when tested physiologically, possessed a relative activity of 60 percent, proving that no loss in strength was suffered by the process of benzin extraction. Several

[1] Materia Medica and Therapeutics.

duplicate experiments were carried out, each of which checked the above results precisely.

The oil extracted from the seed was dark brownish green in color and amounted to 34 percent of the drug.

It possessed the following constants:

Sp. gr. at 25° C.	0.9018
Acid number	19.44
Sapon. number	187.52
Iodine number	95.63

Chemically pure petroleum ether was used in the extraction of the oil, thereby eliminating a possible chance of error due to dissolved impurities.

The National Standard Dispensatory assigns the following constants to the oil:

Sp. gr. at 25° C.	0.9249
Acid number	24.3
Sapon. number	194.6
Iodine number	101.6

No reference to the pharmacological action of the oil could be found.

The pharmacological properties of the oil were investigated, with the following results:

Twenty minims of the oil injected subcutaneously in a dog 5 kgm. in weight, produced no effect other than marked local irritation, which was very severe, the effect passing off after two hours.

Thirty minims of the oil, injected subcutaneously, produced severe local irritation.

Twenty minims of the oil were administered per os to a dog 5 kgm. in weight. The animal became very uneasy after 10 minutes, and was readily excitable. Judging from the behavior of the animal, there was severe pain in the region of the abdomen. The animal completely recovered from the effects after one hour.

Thirty minims of the oil were administered per os to a dog 5 kgm. in weight. The stage of uneasiness and excitability followed by emesis, which was very pronounced, and occurred one-half hour after injection. The animal then showed signs of depression, and fully recovered after three hours. The experiment was repeated several times, using several dogs while food was present in the stomach, and while the stomach was empty; always with the same results.

Smaller doses of the oil were given, varying from 5 to 15 minims, and invariably produced symptoms of gastro-intestinal disturbances varying with the amount of the dose. Vomiting, however, is not produced with doses smaller than 30 minims in a small dog.

It was deemed advisable to supplement the experiments by clinical observation, before arriving at conclusions. The tinctures (U. S. P. and deoleated), were concentrated to bring the preparation up to the standard adopted by this firm, and were then mailed to several physicians with instructions regarding the purpose of the experiment, etc. The tinctures were given, alternating, to patients taking the tincture regularly, and in all cases the deoleated tincture was preferred by the patient. The doctors reporting that the deoleated tincture undoubtedly possessed less irritating properties, and in every way was a more desirable

preparation. It is, therefore, hoped that the deoleated tincture of strophanthus will be made an official preparation to replace the tincture of the U. S. P. VIII.

In the estimation of the author, tincture of strophanthus is to be preferred to the tincture of digitalis, which is generally supposed to undergo rapid deterioration. This belief, however, was strongly disputed by Hatcher & Eggleston[2], but there are many facts yet to be established before such a radical view can be accepted.

LABORATORY OF PHARMACOLOGY AND EXPERIMENTAL MEDICINE, BRISTOL-MYERS CO., Brooklyn, N. Y.

ON CRYSTALLINE KOMBE'-STROPHANTHIN.

D. H. BRAUNS, PH. D., AND O. E. CLOSSEN, PH. B., DETROIT, MICH.

(Continued from page 618.)

Properties of strophanthidin. Under the magnifying glass strophanthidin shows the same shape of crystals as shown in the picture of strophanthidin given by Feist. It contains one molecule of water of crystallization. Feist had trouble in drying the substance and it was only by obtaining crystals of a methyl alcohol containing strophanthidin, which gave off readily the methyl alcohol at 100° C. that he could establish the formula for dry strophanthidin. Feist, and also Heffter and Sachs, did not dry in a heated vacuum, but only at ordinary pressure. By drying in vacuo at 110-115°, we could readily obtain crystalline water-free strophanthidin. Also at lower temperature (105° in vacuo) the water is given off, but slowly. In moist air the water is taken up again. Found: 3.56%, 3.50% and 3.02% calculated for $C_{27}H_{38}O_7 + H_2O$: 3.66% H_2O.

Melting point. Strophanthidin melts at about 120°C in its water of crystallization to a turbid mass and melts at about 170°C. The dried substance melts as Feist describes at 169°-170°C, foaming at 180°C, it becomes solid by cooling and then melts at 232°.

Specific rotation. 1.008 gm. air dry strophanthidin (from crystalline strophanthin) was dissolved in 25 cc. methyl alcohol.

$$(\alpha)\ D = \frac{100\alpha}{l\,c} = +44.26 \qquad l = 2 \qquad \alpha = +3.57°$$

0.3300 gm. air dry strophanthidin (from amorph. acid strophanthin) was dissolved in 25 cc. methylalcohol.

$$(\alpha)\ D = \frac{100\alpha}{l\,c} = +44.26 \qquad l = 2 \qquad \alpha = +1.17°$$

Feist found for 0.5043 gm. strophanthidin dissolved in 25 cc. methyl alcohol

$$(\alpha)\ D = +45.45$$

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[2] Paper read before April meeting New York Branch of A. Ph. A.

Combustion.

I. 0.2196 gm. air dry strophanthidin (from cryst. strophanthin) gave 0.1598 gm. H_2O and 0.5300 gm. CO_2.

A second combustion was made of air dry strophanthidin (from cryst. strophanthin trade) which was not purified by recrystallization from alcohol, but was used as it is obtained in splitting the crystalline strophanthin according to Kohn and Kulisch.

After having been thoroughly washed with water it was dried in air.

II. 0.2198 gm. air dry strophanthidin (not recrystallized) gave 0.1660 gm. H_2O and 0.5312 gm. CO_2.

or in percent:

	I	II	Calc. f. $C_{23}H_{32}O_7+H_2O$
C	65.82	65.91	65.80
H	8.16	8.46	8.20

Thus it is apparent that recrystallization does not alter the constitution.

III. 0.2054 gm. strophanthidin (from cryst. strophanthin) dried at 110-115° in vacuo gave 0.1499 gm. H_2O and 0.5164 gm. CO_2.

IV. 0.2330 gm. strophanthidin (from amorph. acid strophanthin) dried at 110-115° in vacuo gave 0.1770 gm. H_2O and 0.5845 gm. CO_2; or in percent:

	III	IV	Calc. f. $C_{23}H_{32}O_7$
C	68.57	68.41	68.30
H	8.18	8.01	8.09

Quantitative estimation of strophanthidin in crystalline strophanthin.

0.5000 gm. air dry crystalline Kombe strophanthin was placed in a 200 cc. Erlenmeyer flask with 25 cc. 1% H_2SO_4 and boiled one hour with a reflux condenser. The separated strophanthidin was caught on a quantitative filter. The filtrate and wash water (about 50 cc.) was distilled to 25 cc. and boiling continued with a reflux for one-half hour. The separated strophanthidin was caught on the same filter paper and this process once more repeated. The total yield of strophanthidin was dried in vacuo, giving 0.2638 gm., or 52.76%.

0.500 gm. of air dry crystalline Kombe strophanthin was placed in a 200 cc. Erlenmeyer flask with 22 cc. of 2.2% HCl (twice the volume of the same strength HCl as used by Kohn and Kulisch) and boiled one-fourth hour with a reflux condenser, cooled and filtered; the filtrate concentrated to original volume and boiling continued with reflux condenser for one-fourth hour. After cooling, the separated strophanthidin was caught on the same filter and dried in vacuo, giving 0.2533 gm., or 50.46%.

Quantitative estimation of strophanthidin in amorphous Kombe strophanthin.

0.500 gm. air dry amorphous Kombe strophanthin Merck was placed in an Erlenmeyer with 50 cc. 0.5% HCl and heated to 75° and further treated, according to the method of Feist, repeating the heating three times. Dried in a vacuo, 0.2218 gm. strophanthidin was obtained, or 44.36%.

0.5000 gm. air dry amorphous Kombe strophanthin Merck was placed in an Erlenmeyer with 25 cc. of 1% H_2SO_4 and treated as the first determination on crystalline Kombe strophanthin. This gave 0.2234 gm. of vacuum dry strophanthidin, or 44.78%.

The largest yield of strophanthidin obtained by Heffter and Sachs from crys-

talline Kombe strophanthin (air dry) was 58%, from amorphous Kombe strophanthin 50%, and from hispidus strophanthin 45%.

Air dry crystalline Kombe-strophanthin $C_{40}H_{56}O_{15} + 3\,H_2O$ contains 57.11% anhydrous strophanthidin ($C_{27}H_{38}O_7$).

It is interesting to note that the yield of strophanthidin from amorphous Kombe strophanthin and from hispidus strophanthin is less than from crystalline Kombe-strophanthin, thus indicating (cf. the later pentose estimation in amorphous strophanthin) that the non-strophanthidin moiety is larger in hispidus and amorphous Kombe-strophanthin than in the crystalline Kombe strophanthin.

CRYSTALLINE KOMBE-STROPHANTHIN.
Table of Comparisons.

Strophanthin.	Fraser	Arnaud	Kohn & Kulisch. a)	Feist. b)	Heffter & Sachs.	Own investigations.	
How prepared.	Ppt. by tannic acid and dec. by PbO.	Removed impur. by basic lead.	Same as Arnaud.	Same as Fraser.	About same as Arnaud.	By spontan. crystal of alcoh. extr. Cry. stroph.	Am. acid stroph.
Reaction with H_2SO_4	green	.....	red	green	dark green	dark green	red-green
Melting point of dried str.	173°	165° not dried	179°	170°	177-181°	178-179°	180°
Average % of hydr. water.	.....	.....	.....	7.48	.....	6.3	6.9
Spec. Rot. of watery sol..	.....	+30	inact. or neg.	+10.12	+28.72	+28.7	+20.6
How dried for comb.	.....	110°	105-109°	100-105°	105-110°	105-110°	105-110°
Aver. % C....	55.43	60.54	60.57	56.17	61.93	61.97	60.50
Aver. % H....	7.56	8.00	7.71	7.36	7.64	7.98	7.62
Aver. % OCH_3	.....	.....	3.58	3.64	4.73	.....	.....
Mol. wgt.....	.....	.....	.....	679	.....	783	.....
Strophanthidin %	.....	.....	52.5	50-52	56-58	50-53	.....
Strophanthidin prep. by action of	.....	.....	boil 2.4% HCl	0.5% HCl at 75°	0.5% HCl at 75°	boil 4% and 1% HCl	boil 1% H_2SO_4
Melt p. of dried	.....	.....	193°	169-170° foam 176°	169-173° foam 178°	170° foam 180°	170-180°
Aver. % hydr. water	.....	.....	.....	7.0	.....	3.6	3.3
Spec. Rot. alcoh. sol....	.....	.....	.....	+45.45	+41.49	+44.26	+44.3
How dried f. comb.....	.....	.....	in vac. + H_2SO_4	c)	vac. + H_2SO_4	vac. at 110°	vac. at 110°
Aver. % C....	.....	.....	71.07	68.32	66.44	68.57	68.41
Aver. % H....	.....	.....	8.63	8.02	8.07	8.18	8.01
Aver. % OCH_3	.....	.....	5.6	No OCH_3	No OCH_3	.....	.....
Mo. wgt.....	.....	.....	.....	474	.....	.....	.....
Rhamnose estim.	.....	.....	.....	1 mol. rham	.....	none	none
OCH_3 in sugar	.....	.....	.....	6.25	.....	.....	.....

(a) Strophanthin prepared by Merck from hispidus gave Kohn and Kulisch the same results.
(b) Strophanthin prepared by Schuchardt from hispidus gave Feist the same result.
(c) Strophanthidin containing chrystalmethylalcohol was dried at 100°.

From this table, it seems very probable that Arnaud separated the same crystalline strophanthin as we did, but by recrystallizing it, converted it into the amorphous one and using amorphous strophanthin for his combustion (supposing it to be a hydrate, which by drying could give off the water) came to wrong conclusions.

The strophanthin of Kohn and Kulisch has a different specific rotation and gives by splitting a different strophanthidin, which may be due to the method of cleavage.

It would be interesting to investigate other strophanthus species, or to prepare Kombe-strophanthin from Strophanthus Kombe seed at different stages of ripe-

ness in an endeavor to obtain the strophanthin of Kohn and Kulisch. It may be stated here that the formula and cleavage equation which Feist[25] deduced from the data of Kohn and Kulisch best interpret their results.

The table shows the exact coincidence of our results with the analytical data of Heffter and Sachs; with the exception of the figures for the combustion of strophanthidin and the quantitative estimation of strophanthidin.

Heffter and Sachs seemed to have the same difficulty as Feist in obtaining an anhydrous strophanthidin. It is interesting to note that drying in a heated vacuum readily yields an anhydrous strophanthidin. This is shown by the agreement of the analytical data with the calculated figures and with the data obtained by Feist for his strophanthidin, which was obtained by driving off methyl alcohol from methyl alcohol containing strophanthidin.

The quantitative estimation of strophanthidin, applied by Heffter and Sachs, gives undoubtedly the best results.

When we compare the results of Feist with our own, the question arises: Are the differences due to the use of Fraser's method? By applying the method of Fraser on Strophanthus Kombe seed a difficulty arises, how to remove the lead and the nitrogen. The same trouble was mentioned by Thoms[26], who presented another method which gave him an ash and nitrogen free amorphous strophanthin. Gerrard[27] also stated that the method of Fraser is not clearly published and suggests the removal of the lead with hydrogen sulphide. When we compare the first and second methods of preparation used by Fraser (mentioned before) we observe, that in the one first described the lead is removed by passing carbon dioxide for *several hours* through the solution of strophanthin; in the second method, carbon dioxide is passed for *two or three days*. It would seem, therefore, that Fraser himself had trouble in removing the lead. The explanation of this is that there is present a lead salt of acid strophanthin which cannot be decomposed by CO_2. Boehringer & Sons, who prepared the strophanthin used by Feist in his experiments, followed the process of Fraser. By applying the method of Gerrard (which is similar to Fraser's) a brittle amorphous ash and nitrogen-free strophanthin was obtained which contained 7.04% H_2O (dried at 105° in vac.) 0.2983 gm. strophanthin (acc. to Gerrard) dried at 105° in vacuo gave 0.1938 gm. H_2O and 0.5945 gm. CO_2, or in percent:

C=58.82 and H=7.80.

Although the investigations are not yet finished, it can be stated that at least two closely related glucosides are present. One, the crystalline Kombe-strophanthin, and another apparently amorphous strophanthin, both yielding the same strophanthidin. The acid amorphous strophanthin obtained from the crystalline glucoside, while showing nearly the same molecular weight, is found, as will appear later, to be only one-third as toxic to frogs as the crystalline strophanthin. The strophanthin investigated by Fraser and by Feist is probably identical with the amorphous preparations of strophanthin prepared by Heffter and Sachs (the analytical data are not taken up in the table) and with the preparation which

[25]Berichte, 1900, 33, p. 2067.
[26]Berichte, 31, p. 271 and 404.
[27]Pharm. Jour. and Trans., 17 (1887), p. 923.

we made according to the method of Gerrard. The toxicity of this amorphous preparation is almost the same as that of crystalline strophanthin. If this amorphous strophanthin were merely a mixture of crystalline strophanthin, and its acid amorphous modification, this mixture would be less toxic than that of the crystalline variety unless it contained, besides the two, another of greater toxicity than that of the crystalline strophanthin. As no such product is known, it follows that only a minute quantity of the acid derivative is associated with the naturally occurring amorphous strophanthin.

Rhamnose is an easily crystallizable substance and readily yields methylfurfurol. It is thus difficult to understand why Feist was unable to obtain rhamnose in a crystalline state, notwithstanding that he obtained strophantobiose methylether as a crystalline body, and only by distilling this sugar complex with 30% sulphuric acid was methylfurfurol indicated. It is perhaps not superfluous to consider the close relationship of l-mannose and rhamnose as seen by the structural formula (Winther[28] and Hudson[29]).

We found further that in large amounts mannose does yield a furfurol derivative. Five gm. d-mannose gave 0.269 gm. blackish brown phloroglucid. According to Alberda van Ekenstein and Blanksma[30] no furfurol, but β-oxy δ-methylfurfurol is formed by the action of hydrochloric acid on hexoses. Both are precipitated by phloroglucine. Amorphous Kombe strophanthin Merck was also distilled with 12.5% HCl in an endeavor to obtain the phloroglucid of (methyl) furfurol. 1.000 gm. of amorphous strophanthin Merck yielded 0.0568 gm. of a dark green phloroglucid, which indicated a pentose. According to the formula of Tollens (Journ. f. Landwirtschaft 1900, p. 379):

$$\text{pentose} = (A + 0.0052) \times 1.017$$

gives 6.3% pentose.

Another experiment 1.000 gm. amorphous strophanthin Merck yielded 0.0577 gm. dark green phloroglucid, or 6.4% pentose.

We have not as yet determined whether this phloroglucid is a mixture of methyl and furforol phloroglucid.

Two molecules of crystalline Strophanthin united by a pentose can explain these observations, but further experiment must decide.

[28]Berichte, 28, p. 3000.
[29]Jour. of Americ. Chem. Soc., 1910, 32, p. 345, and p. 889.
[30]Chemisch Weekblad, 1909, p. 217.

APPENDIX.

While it is known that more than 20 different species of Strophanthus seed may be present on the market[31] there are but three different strophanthins (Kombe-strophanthin, hispidus-strophanthin and gratus-strophanthin or ouabain) of which any chemistry is known. It is a little astonishing that only at the end of a controversy of very well known pharmacognosists and botanists, regarding the question, "What kind of Strophanthus for the Pharmacopoeia, in relation to the question, what kind of Strophanthus should be taken for culture," Arthur Meyer[32] comes to the conclusion that it would be better to investigate first:

1. Which glycosides are contained in the seed of Strophanthus Kombe and of Strophanthus hispidus? Are they the same or different?

2. Is the clinical action of both drugs and the respective glycosides the same? If not, which drug is to be preferred?

In this paper we have attempted to answer the question relative to the chemistry of Strophanthus Kombe, and Heffter and Sachs have done like service for the Strophanthus hispidus seed.

In connection with the results of Heffter and Sachs the following experiments, which have been made with unidentified Strophanthus hispidus seed, seem to us also worthy of publication. We were able to obtain on the N. Y. market 17 kg. of Strophanthus hispidus seed which could be used for experiment.

3.5 kg. powdered hispidus seeds were extracted twice with petroleum ether and gave 950 gm. of a green oil, or 27.1%.

The remaining fat-free powder was percolated with eight times its weight of 70% alcohol. The alcohol was distilled off in vacuo until about 1 liter fluid remained. This fluid was purified with lead subacetate solution and further treated as described before, but no crystals of a glucosid could be obtained. Therefore, we tried to prepare the strophanthidin out of this extract. A large amount of strong alcohol was added, the precipitate filtered and the alcohol of the filtrate removed by distillation in vacuo.

The following method was used: 30 gm. of the thick extract was boiled with 150 cc. 1 % H_2SO_4 in an Erlenmeyer flask of 500 cc. capacity, until the fluid becomes just turbid. The fluid is now quickly cooled to about 50° and the oily brown drops are broken with a glass rod against the walls of the Erlenmeyer flask, until all is reduced to a yellowish white crystalline powder. It is important to do this exactly, though it takes about one-half hour to get it powdered in this way. The strophanthidin can be sucked off on a hardened filter and washed with a little warm water until neutral. The yield of impure strophanthidin was about 10 gm. This strophanthidin was repeatedly recrystallized from boiling alcohol.

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[31]Blondel. Journ. de Pharm. et de Chem., 1888, I, p. 297.
[32]Gilg: Berichte der Deutsch. pharm. Gesellsch., 1902, p. 183.
Arthur Meyer: Archiv. d. Pharm., 245, p. 351.
Hartwich: Apoth. Zeit. 22, p. 1017.
Gilg: Bericht. der deutsch. pharm. Gesellsch., 18, p. 284.
Arthur Meyer: Archiv. d. Pharm., 246, p. 541.

After separating the impure strophanthidin the filtrate, when again boiled for 20 minutes and treated in the same way, gave but a small yield of strophanthidin.

Properties. Under the microscope this purified strophanthidin shows the same shape of crystals as Kombe strophanthidin.

Melting point. The air dried and anhydrous strophanthidin has the same melting point as Kombe strophanthidin. At about 130°C the air dried substance softens and at 170° C. it melts. The fused mass resulting from melting and cooling the air dried product now melts at about 235° C. By drying in vacuo at 110° C.-115° C., strophanthidin free from water of crystallization could be obtained. Found: 2.9% H_2O calculated for $C_{27}H_{38}O_7 + H_2O$, 3.66% H_2O.

Specific rotation. 0.5900 gm. air dry strophanthidin was dissolved in 25 cc. methyl alcohol.

$l = 2$ $\qquad$ $(\alpha)D = \frac{100\alpha}{lc} = 44.07$

$\alpha = +2.08$

Found for Kombe strophanthidin $(\alpha)D = +44.29$.

Combustion.

I. 0.2345 gm. air dry strophanthidin gave 0.1721 gm. H_2O and 0.5681 gm. CO_2.

II. 0.2076 gm. air dry strophanthidin gave 0.1489 gm. H_2O and 0.5027 gm. CO_2.

Or in percent

	I	II	Calculated for $C_{27}H_{38}O_7+H_2O$
C	66.06	66.04	65.80
H	8.22	8.04	8.20

III. 0.2339 gm. strophanthidin dried at 110°-115° in vacuo gave 0.1654 gm. H_2O and 0.5848 gm. CO_2.

Or in percent:

	III	Calculated for $C_{27}H_{38}O_7$
C	68.17	68.30
H	7.93	8.09

From the conformity of these physical and chemical properties we conclude that this strophanthidin and Kombe strophanthidin are identical.

It was not possible to obtain a crystalline glucosid out of these strophanthus hispidus seeds, but the strophanthidin obtained from this glucosid could be identified.

It seems important for a systematic study of the strophanthus seed species and for related species in general to differentiate between their strophanthidins. A quantitative estimation of the strophanthidin not only forms a convenient method for chemical assays, but also their identification is an important factor in determining the species.

PHYSIOLOGICAL.

The physiological activity of crystalline Kombe strophanthin was investigated by the method of Houghton[33] for the standardization of heart tonics of the digitalis series.

This method is based on the minimum lethal dose to frogs. As there is considerable variation in the lethal dose of this series for frogs at different seasons, etc., it becomes necessary, in order to obtain comparable results, to determine, not the toxicity of the sample per se, but its ratio to that of a heart tonic prepa-

[33] Jr. Am. Med. Ass., Vol. 31, p. 959, 1895.

ration of definite strength (the standard). We are thus independent of variation in the resistance of frogs. The minimum lethal dose of the standard is an *experimental* value, while the heart tonic unit (H. T. U.)[34] is an *adopted* one and will be discussed later in connection with the experiments.

Since Kombe Strophanthus seed is adopted as official by the Pharmacopoeias of most countries, it is of real importance that the active principle of Kombe seed be used in comparing the activity of galenical preparations of strophanthus.

In the case of digitalis where a number of differently acting bodies may be present, no one can be used as a basis for comparing the therapeutic value of its galenical preparations. Therefore, since it is impossible at the present time to determine the amount of each of the active bodies, it is better to take a typical heart tonic like crystalline Kombe strophanthin for such comparisons.[35]

In the following experiments frogs (Rana Pipiens) of from ten to thirty grams were used, but with only five grams difference in the weight of frogs for any one comparison. The material was used in such concentration that about 0.5 cc. was needed for an injection. The injections were made by inserting the needle through the mouth into the ventral lymph sac. The frogs were kept in cages in a trough of running water, and at the end of twelve hours the frogs were examined and the results noted.

The toxicity of crystalline Kombe strophanthin is compared with that of some other strophanthins in Table I. The results are calculated for crystalline Kombe strophanthin, at the minimum lethal dose (M. L. D.) of 0.000001 gm. per gm. of frog, which was found to be the mean M. L. D. for the year.

TABLE I.

	M. L. D. per gm. of frogs.
Crystalline Kombe strophanthin (fr. Ident. K.)	0.000001 gm.
Amorphous acid strophanthin (derived fr. above)	0.0000031 gm.
Crystalline gratus strophanthin (Ouabain Merck)	0.00000042 gm.
Amorphous Kombe strophanthin (Merck)	0.00000094 gm.
Amorphous Kombe strophanthin (P. D. & Co.)	0.00000097 gm.
Crystalline Kombe strophanthin (fr. Kombe of trade)	0.00000095 gm.
Amorphous acid strophanthin (derived fr. above)	0.0000031 gm.

It is seen that the crystalline gratus strophanthin (Ouabain Merck) is about twice as toxic as crystalline Kombe strophanthin and the amorphous acid strophanthin from cry. K. strophanthin is practically one-third as toxic. The amorphous Kombe strophanthin, both P. D. & Co. and Merck, and also the crystalline Kombe strophanthin from trade Kombe seed, show practically the same toxicity as the crystalline Kombe strophanthin from identified Kombe seed.

The mean lethal dose was determined for crystalline Kombe strophanthin

[34]Lancet, June 19, 1909, Am. Jr. Pharmacy, Oct., 1909.

[35]It has been suggested that crystalline gratus strophanthin be used for such a standard. However, there are a number of disadvantages in its adoption.

It has never been exactly determined whether the resistance of frogs to the lethal dose of different heart tonics varies differently as the susceptibility of the frog changes with the season, etc. If crystalline Kombe strophanthin is taken as a standard this does not enter into consideration with Strophanthus preparations. With Digitalis we have a large volume of data which shows that this ratio remains very constant, while with gratus Strophanthin very little data is available which bears upon this point.

Gratus Strophanthin or Ouabain, while a nicely crystalline body may contain variable amounts of water of crystallization, and as it does not yield a crystalline strophanthidin the study of its chemistry is under a disadvantage and the identity of the glucoside is to that extent uncertain. Now that we have a crystalline Kombe strophanthin of definite physical and chemical properties that yields in addition a readily crystallizing strophanthidin so that the identity of the glucoside can be reliably determined, there is an advantage in adopting crystalline Kombe strophanthin for such a standard.

from the average of a large number of tests in comparison with a tincture of Strophanthus, of which the yearly mean lethal dose was known.

The results are found in Table II:

TABLE II.

Date.	Standard Average Tr. of Kombe Strophanthus. (1) Dose per gm. of frog in cc.	Result L.	Result D.	Crystalline Kombe strophanthin, C. P. in solution 70% alc. (2) Dose per gm. of frog in gm.	Result L.	Result D.	Corrected for Tr. killing at .000075.
1910							
Mar.	.000060	6	0				
10 to	.000065	5	4	.0000008	3	0	.00000085
22	.000070*	2	10	.0000009*	0	3	.00000097*
Apr.	.000080	5	1	.0000010	4	0	.00000088
8 to	.000085*	1	3	.0000011	1	2	.00000099
11	.000090	0	4	.0000012*	0	3	.00000106*
June	.000065	1	0	.0000008	3	1	.00000086
27, 28	.000070*	0	2	.0000009	4	1	.00000097
	.000075	0	2	.0000010*	0	6	.00000107*
July	.000060	2	0	.0000007	1	0	.0000008
23, 25	.000065*	0	3	.0000008	1	1	.00000092
	.000070	0	4	.0000009*	0	3	.00000104*
Aug. 1	.000050	5	1	.0000007	5	1	.00000088
to 3	.000055	3	4	.0000008*	1	5	.000001*
	.000060*	1	3	.0000009	0	2	.0000011
Sept.	.000055	2	0	.0000006	1	0	.00000075
6 to	.000060*	1	5	.0000007	3	1	.00000088
19	.000065	0	4	.0000008*	0	2	.0000010*
Oct.	.000070	10	0	.0000009	7	1	.0000009
28, 29	.000075*	3	7	.00000095	5	8	.00000095
				.0000010*	0	10	.0000010*
Nov. 1	.000066	2	0	.0000009	3	0	.00000094
	.000069	1	1	.00000095*	0	4	.00000099*
	.000072*	0	2	.0000010	0	3	.00000104
Dec.	.000070	2	0	.0000009	2	0	.00000084
	.000075	2	0	.0000010	3	1	.00000094
	.000080*	0	2	.0000011*	0	2	.00000103*
1911				(3)			
Mar.	.000080	4	0	.0000010	7	1	.00000084
	.000085	3	1	.0000011	4	2	.00000092
	.000090*	0	2	.0000012*	0	6	.0000010*
				(4)			
Oct.	.000055	6	2	.00000070	2	0	.00000080
28 to	.000060	4	3	.00000075	5	2	.00000086
Nov. 2	.000065*	2	10	.00000080	1	5	.00000092
	.000070	2	5	.00000085*	0	4	.00000098*
	.000075	0	5	.00000090	2	4	.00000104
				.00000095	1	8	.0000011
1912				(4)			
Apr. 25	.00006	2	0	.0000007	11	4	.00000075
May 8	.00007*	0	2	.0000008	4	8	.00000086
				.0000009*	1	7	.00000097*
				.000001	0	5	.00000107
				(5)			
July	.000055	9	2	.00000075	7	0	.00000080
24	.000060	8	8	.00000080	16	1	.00000086
Aug. 3	.000065	5	11	.00000085	7	12	.00000090
	.000070*	0	15	.00000080*	0	16	.00000097*
Average	.000072			.00000096			.00000100

(1) The standard tincture was kept in the refrigerator.

(2) The crystalline Kombe strophanthin (1 in 1000) in 70% ethyl alcohol was kept at room conditions in amber vials sealed to prevent evaporation. A solution made June 27, 1910, was used in all tests except those made April and June, 1910, unless noted.

(3) Part of these were from solution freshly made up.

(4) These were from solutions freshly made up.

(5) Part of these were from solution freshly made up, and part from solution made up September, 1911, and part from solution of June, 1910 (cf. table of permanency.)

The value .000001 gm. per gm. of frog for the M. L. D. is the mean of the first year's lethal doses for crystalline Kombe strophanthin. If the lethal dose of the standard tincture is taken at .000075 cc. per gm. of frog for the mean M. L. D. of the year, the toxicity of crystalline Kombe strophanthin comes out almost exactly .0000010 gm. per gm. of frog.

The value .000075 cc. for the average lethal dose for this tincture of Kombe Strophanthus is based on the average of a very large number of tests, extending over a number of years. It was the standard previously used for determining the strength of all the heart tonics manufactured by Parke, Davis & Co.

It seems established that the mean M. L. D. for crystalline Kombe strophanthin is .0000010 gm. per gm. of frog (Rana Pipiens of 10 to 30 gm.)

Other methods for determining the physiologic value of heart tonics were compared on this crystalline Kombe strophanthin.

The time necessary for a frog's heart to cease beating has been proposed by Focke[36] as a method for comparing heart tonic preparations.

He endeavors to determine the value of a preparation by the relation $V = \frac{P}{D.T.}$ where P is the weight of the frog, D is the dose of the material, and T is the time elapsing before complete cessation of the ventricle beat occurs.

(To be continued)

PHYTOCHEMICAL NOTES.

EDWARD KREMERS, MADISON, WIS.

Introduction.

It is almost twenty-five years ago that the writer was initiated into the realms of chemical research by his teacher and friend, Dr. Frederick B. Power, who was the first professor of pharmacy at the University of Wisconsin and who has contributed so much to plant chemical research, especially during the past ten years as director of the Wellcome Research Laboratory in London. This first experience acquainted the writer at the same time with the charm that is associated with the application of chemistry to the study of plant life, a charm that has never deserted him, though at times the pressure of other investigations and manifold duties compelled him to abandon phytochemical problems. That he has ever recurred to these problems becomes apparent, however, from the accompanying list of published notes, many of which are but fragmentary accounts.

The object of this compilation of titles is not so much to effect an inventory as it is to place in the hands of student investigators of this laboratory a con-

[36] Arch. d. Pharm. Bd. 241, p. 128. Ibid. Bd. 248, p. 345-76.

venient bibliography of the work done here, and, more particularly, to point out to them the connecting thought that makes many of these notes the result of a deliberate plan rather than of a haphazard seeking for new isolated facts.

This list does not include the titles of articles of purely chemical investigations of plant products, such as menthol and its derivatives, citronellal and its derivatives, abietic acid, etc., some of which have grown out of phytochemical investigations. Neither are the earlier investigations of Prof. Power nor more recent investigations of Prof. R. Fischer on alkaloids included. The catalogue, therefore, is not one of phytochemical investigations of the School of Pharmacy of the University of Wisconsin, but one of the fragmentary notes published by the writer or by students working under his directions.

The first plant investigated was the white ash, a subject suggested by Prof. Power for a graduation thesis (No. 1). The genetic relationship between *Fraxinus americana* from Wisconsin and the manna-yielding *F. ornus* from the Mediterranean suggested the examination of other species of *Fraxinus* that were available in this state. As a result *F. cambucifolia* and *F. viridis* were made subjects for graduation theses by students (Nos. 23 and 19). Whereas mannitol was found in some species, its stereochemical isomer, dulcitol, was found in others. The study of these species was not restricted, however, to the isolation of the hexatomic alcohols mentioned, but their closely related oxidation products, the sugars, and the glucosides were likewise investigated so far as time and material permitted. The study of the several species of *Fraxinus* promises to be fruitful of good results and should be continued, even though the collection of suitable material is difficult at times. See also Nos. 11 and 20.

The writer's first experience with volatile oils was obtained in connection with the oils of pennyroyal (No. 2), and citronella (No. 3), both oils being investigated at the suggestion of Professor Power and under his direction during the academic year 1886-'87. The contribution of the two papers to the American Pharmaceutical Association at the Cincinnati meeting in 1887 caused the writer to join the association at that time. The papers being read by Professor Lloyd, later brought the writer into touch with one who had done much for the chemical study of American medicinal plants when few realized the importance of this subject or the opportunities in this large, uncultivated field. Even today this is largely virgin soil waiting for the pioneer investigator.

The first article on pennyroyal was followed by several others (Nos. 4, 6, 14, 17), which, however, accomplished little more than to establish the presence of pulegone in this oil. The presence of pulegone was later established in two other oils of the mint family, namely: *Pycnanthemum lanceolatum* (Nos. 32 and 40), and *Mentha canadensis* (No. 39).

The initial study of citronella oil (No. 3) led to further studies (No. 13), principally, however, of the aldehyde citronellal, which are not enumerated in the list because they are not essentially phytochemical in character, but purely chemical.

Thus initiated into the study of an exceedingly attractive group of plant products, the writer has spent more time on the volatile oils than on any other subject. Among the oils first examined were some from the family of conifers: *Abies balsamea* (Canada balsam, Nos. 5, 25), *Pinus strobus* (leaves, No. 8),

Pinus palustris (No. 27), *Picea nigra* (No. 28), *Pinus cubensis* (No. 29), *Tsuga canadensis* (No. 33), *Picea alba* (No. 42), *Pinus sabiniana* (Nos. 45 and 66), an unknown species yielding Oregon balsam (No. 56), *Juniperus sabina* (No. 57), *Larix europaea* (No. 58), *Abies amabilis* of the Pacific coast (No. 59), *Pinus longifolia* of India (No. 63), *Pinus murryana, Picea Engelmanni, Pinus edulis,* and *Pinus flexulis,* all collected by Professor Pammel in Colorado (No. 71). These investigations represent the study not only of oils obtained from the oleoresinous exudations, but also of oils from leaves and cones. Thus, e. g., one of the leaf oils (hemlock) was found to be very rich in bornyl acetate, and, in a rational system of forestry, might be made a source for camphor.

The study of these species was not, however, restricted to their volatile constituents. The very first species enumerated above suggested the examination of the resin acids as well, which have long attracted the attention of chemists. As a result the resin acids from other species were included. Not only were the natural resin acids studied, but also such that had undergone changes in the process of preparation (Nos. 7, 9, 10, 12, 13). These phytochemical studies of the resin acids led, likewise, to the purely chemical study of abietic acid, not enumerated, in which, among other experiments, the first molecular determinations of abietic acid were made as a contribution to the much controverted subject of the size of the molecule of this acid. Other resins and oleoresins examined are those of an unknown species yielding Oregon balsam (No. 56), of *Larix Europaea* (No. 58), *Abies amabilis* (No. 59), *Pinus longfolia* (No. 63), *and Pinus sabiniana* (No. 66).

Attention has already been called to two local species of the mint family, *Pycanthemum lanceolatum* (Nos. 32 and 40), and *Mentha canadensis* (No. 39), which have been examined in addition to pennyroyal, *Hedeoma pulegioides* (Nos. 2, 4, 6, 14 and 17). Other labiate oils examined are those of spearmint, *Mentha viridis* (No. 16), peppermint oil, *Mentha piperita* (No. 18), *Mentha citrata* (No. 73), and the monarda oils.

The study of Monardas was begun in 1895 with the examination of the oil of the local *Monarda fistulosa,* a study that has been continued up to the present time (Nos. 26, 34, 36, 44, 47, 48, 51, 52, 55, 69, 75). It was extended by including *M. punctata* (Nos. 35, 43), growing on the more sandy soil of Arena, west of Madison, and has thus far included *Monarda didyma* (No. 50), from the East, and *Monarda citriodora* (No. 53, 77), from the South. A mere beginning has been made with a fifth species, viz., the *M. bradburiana.* As rapidly as other material can be secured, some of which is now being cultivated on university grounds, more species will be included within the scope of the investigation.

From its inception, the work on the Monardas was a chemical study in comparative plant physiology. As such it has proven exceedingly interesting. Not only, however, have the constituents of different species been compared, but the influence of cultivation and different seasons has been looked into. Moreover, and this is possibly the most important aspect of this study, the volatile constituents have not been studied merely by themselves, but in connection with the other constituents of the plants. Thus, e. g., it has been shown that at least some of the pigments of the monardas stand in direct relation to some of the volatile constituents, and that the ferments contained in the plant exert their influence

on both (Nos. 54, 55 and 69). In order to explain the different shades of color of the same pigment a study of the mineral constituents has been undertaken. For the purpose of taking stock, as it were, of the material accumulated in the study of the Monardas, a monograph has been prepared by Miss Nellie Wakeman and published as a bulletin by the University of Wisconsin. However, the work along this line is not to end here. Exact moisture and oil determinations have been made during the summer with cultivated material of *Monarda fistulosa.* A Missouri variety of *M. fistulosa* is being cultivated and a first sample of oil therefrom has already been distilled. Through the kindness of Professor Eberle, a large amount of *Monarda citriodora* has been obtained. It has been distilled and the volatile and pigment constituents are being examined. Further work on *Monarda punctata* is also under way.

Here again, as in previous instances, the initial study of plant products has led to the purely chemical study of some of their constituents. Thus the derivatives of thymol and carvacrol, their oxidation to hydrothymoquinone and thymoquinone, monohydroxy thymoquinone, and dihydroxythymoquinone, all of which are found in Monarda oils, and the subtle characteristics of the thymoquinhydrone and other quinhydrones and phenoquinones had to be studied by themselves in order to be able to interpret properly the observations made in connection with the plants. Some of these investigations have been reported on, but are not included in the phytochemical list; others are still in progress. The more general application of the quinhydrone hypothesis of pigmentation, which resulted from the study of the *Monardas,* is now being made the subject of a special study.

Among other oils examined are those of *Canella alba* (Nos. 15, 24), *Erigeron canadense* (Nos. 21, 30, 60, 65), Saw pelmetto (No. 46), *Pseudocymopterus anisatus* (No. 49), wintergreen and birch (No. 61), several new Artemesia oils (Nos. 62 and 64), American wormseed oil (No. 65*), oils from milfoil (No. 67), California eucalyptus oils (No. 68), celery seed oil (No. 74), wormwood oil (No. 78). The occurrence of methyl salicylate in nature is discussed in No. 41; the absence of hydrocyanic acid in *Mitchella repens* is shown in No. 38.

Triticum repens (No. 22), Kava kava (No. 31), Johore gambier (No. 37), the Johore products of the cocoanut palm (No. 72), and currant wine (No. 76), were likewise investigated. The reasons for taking up these several subjects need not here be mentioned; some have grown out of other work, others were examined upon request, etc.

The reference to methyl salicylate suggests calling attention to another piece of work that has grown out of the work on the volatile oils, but which does not strictly come within the scope of these "Phytochemical Notes." Reference is here had to the classification of the volatile constituents of plants in accordance with rational principles of modern classification and a critical discussion of their occurrence in the vegetable kingdom. The publication of this work was begun some years ago, but had to be interrupted temporarily on account of U. S. P. revision duties. This work has led not only to the classification of other groups of plant constituents, such as glucosides and alkaloids, but to a revision of the entire field of the classification of carbon compounds.

The writer trusts that these brief remarks on work scattered over a period of twenty-five years may throw some light on more than seventy fragmentary pub-

lications that must largely appear without connection or positive plan to the casual reader.

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1886.

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1887.

2. Edward Kremers. Analysis of the volatile oil of *Hedeoma pulegioides.* Proc. A. Ph. A., 35, p. 546.
3. Examination of oil of *Andropogon nardus.* Proc. A. Ph. A., 35, p. 562.

1888.

4. Edward Kremers. Remarks of the analysis of the volatile oil of *Hedeoma pulegioides.* Pharm. Rundschau, 6, p. 103.

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5. Gustave V. Kradwell. *Terebinthina canadensis,* with a review of the different varieties of turpentines. Proc. Wis. Pharm. Assn., 12, p. 37.
6. Edward Kremers. The volatile oil of *Hedeoma pulegioides.* Persoon. Pharm. Rundschau, 9, p. 130.
7. John L. Mead. Examination of black pitch. Proc. Wis. Pharm. Assn., 12, p. 43.
8. Walter A. Trayser. Examination of the leaves of *Pinus strobus.* Lin., Proc. Wis. Pharm. Assn., 12, p. 41.

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9. Otto Hackendahl. Resin acid from black pitch. Proc. Wis. Pharm. Assn., 13, p. 48.
10. Wm. G. Kuntz. Burgundy pitch. Proc. Wis. Pharm. Assoc., 13, p. 53.
11. Rudolph H. Mieding. Examination of the inner bark of *Fraxinus americana,* L., Proc. Wis. Pharm. Assn., 13, p. 80.
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13. Leopold C. Urban. Citronellone. Proc. Wis. Pharm. Assn., 13, p. 61.
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15. Harold N. Bruun. The volatile oil of *Canella alba.* Proc. Wis. Pharm. Assn., 14, p. 36.
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17. Charles J. Habhegger. On the composition of American pennyroyal oil. Proc. Wis. Pharm. Assn., 14, p. 51.
18. Robert I. Halsey. The hydrocarbons of peppermint oil. Proc. Wis. Pharm. Assn., 14, p. 88.
19. Henry O. Hilfert. *Fraxinus viridis, Michx.* (Green Ash.) Ph. Rund., 11, p. 215; also Proc. Wis. Pharm. Assn., 14, p. 63.
20. Edward Kremers. Dulcitol. Pharm. Rundschau, 11. p. 158.
21. Fritz W. Meissner. Oil of *Erigeron canadense,* L. ,Proc. Wis. Pharm. Assn., 14, p. 65.
22. Harriet R. Pope. Chemical constituents of rhizome of *Triticum repens.* Proc. Wis. Pharm. Assn., 14, p. 96.
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1894.

24. Robert T. Williams. The volatile oil of *Canella alba.* Pharm. Rundschau, 12, p. 183.

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25. H. L. Emmerich. The volatile oil from Canada balsam. Am. Journ. Pharm., 67, p. 135.
26. J. L. Mead and J. J. Brennan. On the chemical composition of the volatile oil from *Monarda fistulosa, Linne.* Pharm. Rundschau, 13, p. 207.
27. J. D. Heald. Oleoresin from *Pinus palustris.* Pharm. Rundschau, 13, p. 135.
28. C. G. Hunkel. Oil from *Picea nigra.* Pharm. Rundschau, 13, p. 135.
29. C. G. Hunkel. Oleoresin from *Pinus cubensis,* Gries. Pharm. Rundschau, 13, p. 136.
30. Carl G. Hunkel. Terpineol from Oil of *Erigeron canadense.* Pharm. Rundschau, 13, p. 137.

1896.

31. Arthur E. Bossingham. On the chemical composition of Kava Kava. Proc. W. P. A., 16, p. 53.
32. Washington G. Correll. Oil from *Pycanthemum lanceolatum,* Pursh. Ph. Rev., 14, p. 32.
33. Carl G. Hunkel. Oil from *Tsuga canadensis, Carriere.* (Hemlock Oil.) Ph. Rev., 14, p. 34.

34. E. J. Melzner. On the chemical composition of the oil of *Monarda fistulosa*. Ph. Rev., 14, p. 198; also Proc. A. Ph. A., 44, p. 242.
35. W. R. Schuman. On the chemical composition of the oil of *Monarda punctata*. Ph. Rev., 14, p. 223; also Proc. A. Ph. A., 44, p. 238.

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36. E. J. Melzner. Phenol content of the oil of *Monarda fistulosa*. Ph. Rev., 15, p. 86.
37. William O. Richtmann. Johore gambier. Ph. Rev., 15, p. 27.

1898.

38. Richard Fischer. Test for hydrocyanic acid in *Mitchella repens*. Ph. Rev., 16, p. 98.
39. Florence M. Gage. *Mentha canadensis*. Ph. Rev., 16, p. 412.
40. F. W. Alden. *Pycnanthemum lanceolatum*, Pursh. Ph. Rev., 16, p. 414.
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42. W. A. Trayser. Some coniferous volatile oils. I. Oil of White pine. Ph. Rev., 17, p. 506.
43. W. E. Henricks. *Monarda punctata*. Ph. Archives, 2, p. 73.
44. I. W. Brandel. *Monarda fistulosa*. Ph. Archives, 2, p. 76.

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45. Edward Kremers. Notes on coniferous oils. II. Oil from *Pinus sabiniana*. Ph. Rev., 18, p. 165.
46. Oswald Schreiner. Saw palmetto oil. Ph. Rev., 18, p. 217.

1901.

47. I. W. Brandel. Thymoquinone in wild bergamont oil. Ph. Rev., 19, p. 200.
48. I. W. Brandel. Hydrothymoquinone in wild bergamont oil. Ph. Rev., 19, p. 244.

1902.

49. Irwin W. Brandel. The volatile oil from *Pseudocymopterus anisatus*. Ph. Rev., 20, p. 218.

1903.

50. I. W. Brandel. Oil of *Monarda didyma*. Ph. Rev., 21, p. 109.
51. J. J. Beck. Oil from the corolla of *Monarda fistulosa*. Ph. Rev., 21, p. 111.
52. I. W. Brandel. Oil from the leaves of *Monarda fistulosa*. Ph. Rev., 21, p. 113.

1904.

53. I. W. Brandel. The volatile oil from *Monarda citriodora*. Ph. Rev., 22, p. 153.
54. Frank Rabak. Oxydase from *Monarda fistulosa*. Ph. Rev., 22, p. 190.
55. D. B. Swingle. The thermal death points of *Monarda ferments*. Ph. Rev., 22, p. 193.
56. Frank Rabak. Oregon balsam. Ph. Rev., 22, p. 293.

1905.

57. E. F. Ziegelmann. Oil of savin. Ph. Rev., 23, p. 22.
58. Frank Rabak. Oleoresin from *Larix europaea*. Ph. Rev., 23, p. 44.
59. ———. Oleoresin from *Abies amabilis*. Ph. Rev., 23, p. 46.
60. ———. Oil of *Erigeron canadense*. Ph. Rev., 23, p. 81.
61. E. F. Ziegelmann. Oils of wintergreen and birch. Ph. Rev., 23, p. 83.
62. Frank Rabak. On several new Artemesia oils. Ph. Rev., 23, p. 128.
63. ———. On the oleoresin of *Pinus longifolia*. Ph. Rev., 23, p. 229.

1906.

64. Frank Rabak. Notes on several new Artemesia oils. II. Ph. Rev., 24, p. 324.
65. ———. Oil of *Erigeron canadense*. Ph. Rev., 24, p. 326.

1907.

*65. Edward Kremers. An experience with American wormseed oil. Ph. Rev., 25, p. 155.
66. Frank Rabak. Oleoresin of *Pinus sabiniana*. Ph. Rev., 25, p. 212.
67. Arthur Sievers. Oils from milfoil. Rev., 25, p. 215.

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68. Edward Kremers. California eucalyptus oils. 26, p. 177.
69. Nellie Wakeman. Quantitative determination of oxydase in the leaves of *Monarda fistulosa*. Ph. Rev., 26, p. 314.

1909.

*70.
71. John Swenholt. Four pine-needle oils from Colorado. Midland-Review, 43, p. 611.

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*Owing to editorial errors, No. 65 appears twice, but no No. 70.

1910.
72. Wm. H. Kendell. Palm sugar, vinegar and copra oil. Midland-Review, 44, p. 78.
*73. R. C. Roark. Oil from Mentha citrata.
74. John Swenholt. Oil of celery seed. Midland-Review, 44, p. 220.
75. S. K. Suzuki. Hydrothymoquinone and oxidation products from Monarda fistulosa. Midland-Review, 44, p. 342.
76. W. H. Kendell. Currant wine. Midland-Review, 44, p. 478.
77. C. Lefebvre and N. Wakeman. Oil of Monarda citriodora. Midland-Review, 44, p. 526.
1912.
*78. R. C. Roark. An unusual oil of wormwood.

THE IMPROVEMENT OF MEDICINAL PLANTS.†

F. A. MILLER, INDIANAPOLIS.

Certain suggestions were made before the last meeting of the Academy for the possible improvement of valuable medicinal forms through the application of breeding methods. Some of these suggestions have been carried out during the past summer upon experimental plots of belladonna, henbane, stramonium, digitalis and cannabis. The results, though only tentative, are extremely encouraging, and indicate a means of obtaining not only greater yields of the resultings drugs, but better and more reliable medicinal products.

Belladonna has shown great uniformity in morphological characters, but considerable variability in the percentage of alkaloids in selected plants. In a comparatively small number this variation was found to be over 50 percent, or from 0.52 percent to 0.87 percent total alkaloids as found in the highest and lowest yielding individuals. Much has been said concerning the variation in total alkaloids as influenced by various conditions. In fact, some experimental work has been done upon the influence of such factors as food elements, light and shade, soils, meteorology, etc., upon the production of alkaloids and other active principles. It now seems apparent, however, that before such data can have any scientific bearing, or be utilized as a means of following the influence of given factors, uniform strains of the plants under investigation must first be obtained. This apparent necessity is due to the wide variations which have been found to exist between the individuals of a given group which have been grown under uniform conditions.

A group of individual plants varying over 50 percent when grown under uniform ecological conditions cannot be expected to behave uniformly when grown under varied conditions. Differences no greater than 50 percent have been reported as being due to certain external influences as affecting all plants upon a given area, while according to recent individual plant investigations, such an area might produce plants varying this much or more among themselves, and representing at the same time any possible mixture with reference to yield. It seems necessary, for this reason, to first obtain a strain of the form under investigation, the individuals of which will react uniformly to certain external conditions. To investigate this point, plants of known alkaloidal yield are being propa-

*These studies will appear in later issues of this publication.—EDITOR.

†Read before the Botanical Section, Indiana Academy of Science, Nov., 1912.

FIG. I. COMMERCIAL TEST AND BREEDING PLOT OF BELLADONNA.
Experimental Farm, Eli Lilly & Company, Indianapolis, Indiana.

FIG. II. COMMERCIAL TEST PLOTS OF VARIOUS SPECIES AND VARIETIES OF DIGITALIS.
Experimental Farm, Eli Lilly & Company, Indianapolis, Indiana.

gated both from inbred seeds and from vegetative cuttings. The progeny thus produced is being grown under the same conditions as the parent plants, as well as under widely different conditions. The alkaloidal yield of these plants will later be taken as a means of determining the results of the various treatments.

The highest yielding individuals from all groups examined are immediately selected as parent plants for possible high yielding strains. The propagation of these favorable individuals is continued throughout the year by means of greenhouse and cold-frame accommodations, and are tested as rapidly as sufficient material becomes available.

The production of henbane, even upon a small experimental scale, has proven extremely difficult. This difficulty is largely due to the ravages of insects, although cultural difficulties with this plant are not uncommon. It will not reproduce itself from open field sowings and transplants with uncertainty. However, a small number of biennial plants were grown and found to test 0.089 percent total alkaloids at the end of the first season's growth, while commercial drug has only averaged 0.067 percent for the past year. The Pharmacopoeia requires that this drug be collected from plants of the second year's growth. The above figures indicate that it may be entirely unnecessary to grow this plant through the second year to obtain a high yield of alkaloids. The annual form was again observed and though no tests were made, an abundance of seed was obtained from which plantings will be continued. The appearance of this annual form in many plantings of henbane of supposed biennial origin has led to much dispute. Its investigation is necessary from this point of view as well as the possibility for developing an annual form which would possess many cultural advantages over the biennial.

The selecting of high-yielding stramonium plants upon a basis of their contained alkaloids has been continued through two years. Averages as obtained from the progeny of selected parent plants have shown a marked increase over those from wild plants growing in the same locality. These averages are 0.61 percent, 0.50 percent, 0.60 percent and 0.64 percent from Datura Stramonium L., and 0.49 percent, 0.54 percent, 0.62 percent and 0.68 percent from Datura tatula L., as compared with 0.28 percent from wild plants of Datura Stramonium L. and 0.42 percent from wild plants of Datura tatula L.

Thirty-two forms of the genus Digitalis are under cultivation. These consist of all the species and varieties so far obtainable. These must first be tested for identity before any extensive breeding operations can be performed. Physiological tests have been made which indicate great differencs in the toxicity of some of the more accurately named species and varieties. Though more strictly biennial in habit, it has been found possible to bring a number of the varieties into flower the same year from seed, thereby shortening any breeding operations by one year.

It has been interesting and valuable to follow the effects of Indiana soil and climate upon the medicinal value of Cannabis Indica. This is an imported drug consisting of the flowering tops of Cannabis sativa L. It always contains more or less seeds of high percentage germination. Repeated tests have been made upon material obtained from plants grown from seed found in shipments of high-testing drug. Without exception these tests have shown a decrease of from

FIG. III. BREEDING PLOTS OF DIGITALIS.
Experimental Farm, Eli Lilly & Company, Indianapolis, Indiana.

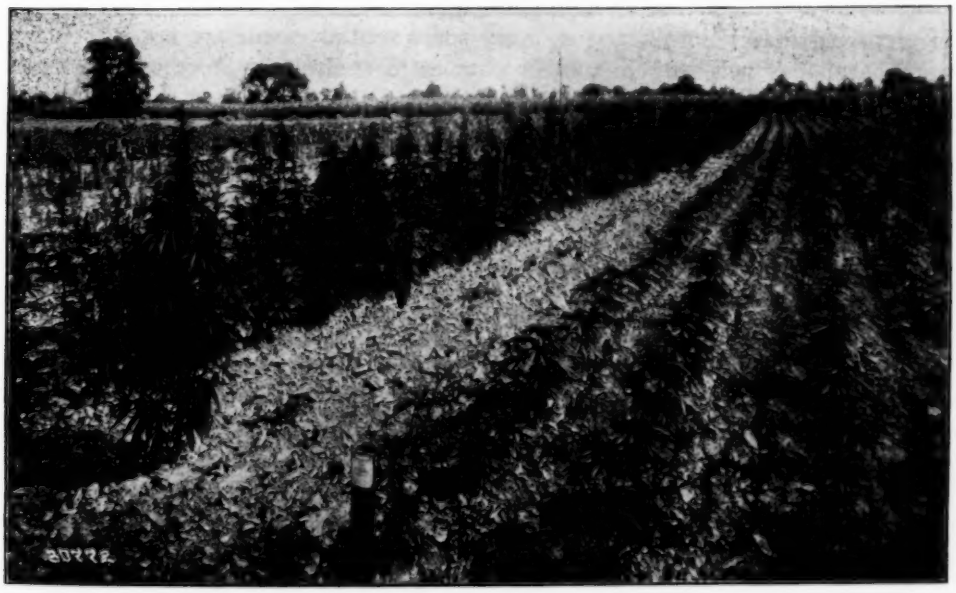

FIG. IV. GROWING CANNABIS FROM DIFFERENT GEOGRAPHICAL SOURCES.
Experimental Farm, Eli Lilly & Company, Indianapolis, Indiana.

40 percent to 60 percent in value as compared with the original shipments from which the seeds were obtained. One strain has been continued under cultivation in the same locality and upon the same soil for four consecutive years, and its value as indicated by physiological tests has fluctuated between 40 percent and 65 percent. This fluctuation has been intermittent, and not in the nature of a regular annual increase or decrease. During this time, however, a marked improvement has resulted in the size and character of the inflorescence. By selection, this has become heavier, more compact, larger and less leafy. A dwarf form has also resulted which would greatly simplify the process of collection.

Figures No. I, II, III and IV show some of the experimental plots, and convey some idea of the scale upon which the work is being done. Large numbers of plants are being used, and these are observed throughout the entire growing season before any selections are made. In this manner the entire life history of the plants, from earliest seedling stage to maturity, is made to serve as a record from which intelligent selections can be made.

DEPARTMENT OF BOTANY, ELI LILLY & COMPANY, Indianapolis, Ind.

METHODS FOR THE ANALYSIS OF CASTILE SOAP.*

JOSEPH L. MAYER, PH. G., PHARM. D., NEW YORK CITY.

Aside from the fact that the sale of a spurious castile soap may subject the seller to legal prosecution, its use causes the difficulty so frequently encountered in preparing soap liniment, and as many soaps sold as castile are not what they are labeled it is necessary to subject samples to analysis in order to determine whether they are properly made olive oil soaps.

In my own work I nave employed the following methods with excellent results:

Sampling. Select a sample which is representative of the whole lot or bar. If in the latter form, shavings should be taken from different parts, such as the outer and inner surfaces, and after being thoroughly mixed kept in a tightly corked bottle from which samples are taken for analysis.

Water. The method of U. S. P., that is taking 0.500 gram of sample, placing in a previously tared beaker containing 1 gram of sand, adding 10 cc. of alcohol and evaporating to dryness and then drying at 110° C. to constant weight is entirely satisfactory. Care must be exercised in heating to conduct the evaporation on a water bath and to employ a small flame, otherwise the sand may be very forcibly ejected from the beaker and the determination ruined.

The quantity of water allowed by the Pharmacopœia, 36 percent, is excessive and should be very much reduced.

Tests for Animal Fats. The Pharmacopœia states that if a four percent alcoholic solution of soap be allowed to cool it should not gelatinize, indicating

* Read before the Kings County Pharmaceutical Society, May 13, 1913

the absence of animal fats. The most satisfactory method of carrying out this test is to place the alcohol and soap in an Erlenmeyer flask and heat on a water bath, employing a reflux condenser to prevent evaporation. When solution is complete the material is allowed to cool to room temperature (not below 20° C.).

This test is not very satisfactory as the Pharmacopœia allows 36 percent of water and as most samples do not contain that much, it is easy to see that instead of a four percent solution one may have almost any strength, depending upon the quantity of moisture, the result being that the solution gelatinizes and indicates animal fat, where none was used.

Therefore the Pharmacopœia should provide tests to determine the origin of the fat employed in making the soap, such as determining the iodine number of the fatty acids and their melting points.

Separation of the Fatty Acids. To a portion of the soap dissolved in water add an excess of diluted sulphuric acid and heat on a water bath until the fatty acids rise to the top in a clear layer, then cool in ice water and when the fatty acids have solidified pour off the water. Repeat this heating and cooling process twice, then filter through paper wetted with water; this will retain the fatty acids which after drying are ready for the tests.

Iodine Number of Fatty Acids. Determine the iodine number of fatty acids as directed by the Pharmacopoeia for fats and oils. The writer employs the Hanus method, and as suggested by him (Drug. Circ., 1910, page 106) this should be adopted as the official method because of the keeping qualities of the solution and the shorter time required to make a determination. Having determined the iodine number of the fatty acid a reference to Allen's Organic Analysis, will indicate the fat or oil which was employed in the preparation of the soap.

Melting Point of Fatty Acids. Take some of the fatty acids prepared as above, gently melt and immerse the bulb of a thermometer in the liquid; in a few seconds it will have congealed and all that remains is to put the thermometer through a cork in an ounce wide-mouth bottle and then suspend the bottle and thermometer in a beaker of water and heat the water slowly. The melting point is regarded as the time when the material forms a clear drop on the tip of the thermometer. Allen's Organic Analysis gives the melting points of various fatty acids.

Tests for Silica and Other Insoluble Matter. The Pharmacopœia determines these by dissolving 20 grams of soap in hot alcohol, washing with hot alcohol, then with hot water and weighing the insoluble residue as silica. A better plan is to take 5 grams of soap, dissolve in about 150 cc. hot water and collect the insoluble matter on a tared ashless filter paper and after washing with hot water drying at 105° C. and weighing. The increase in weight of the filter paper indicates the total insoluble matter. After igniting the residue represents insoluble mineral matter.

Sodium Carbonate. The Pharmacopœia directs 20 grams of soap to be dissolved in hot alcohol and poured on a tared filter paper; the increase in weight of the paper after washing with hot alcohol is regarded as sodium carbonate,

silica, etc. After pouring water on this the residue is silica and other insoluble matter; the difference between the two being regarded as sodium carbonate.

Free Alkali. If upon adding a few drops of alcoholic solution of phenolphthalein to the freshly cut surface of the soap a pink color is not developed, the absence of free caustic alkali is indicated.

The Pharmacopœial method of determining alkalinity is inexact and indefinite.

The method of determining sodium carbonate as above directed can with slight modification be employed for the quantitative determination of free alkali.

In place of 20 grams, take 2 grams of soap, dissolve in about 150 cc. of hot neutral alcohol and filter. After washing the filter thoroughly with hot neutral alcohol add phenolphthalein to filtrate and titrate with N/10 H_2SO_4. The alkalinity found is calculated as free alkali due to sodium hydroxide. The material insoluble in alcohol is then dissolved in water and titrated with N/10 H_2SO_4, using methyl orange as indicator. This alkalinity is calculated as free alkali due to sodium carbonate.

If the soap contains both free alkali and free fat the heating with alcohol will influence the result and for that reason it is often advantageous to follow Devine's method of determining free alkali (Journal American Chem. Soc., 1900, page 693), which is carried out as follows:

Weigh 2 grams of soap into a 300 cc. flask, add 50 cc. of alcohol, and excess of N/10 stearic acid in alcohol, a few drops of phenolphthalein solution, connect with a reflux condenser and place the whole on a water bath for half an hour. The stearic acid should constantly be in excess, indicated by the solution remaining colorless. The excess of acid is determined by means of N/10 alcoholic KOH, the difference is the amount required to combine with the total free alkali in the 2 grams of soap taken.

One cc. N/10 acid is the equivalent of .00397 gram caustic soda or .00526 gram sodium carbonate.

Should it be necessary to determine what quantity of the above is free caustic alkali and what quantity is carbonated, Devine's method provides that a second determination similar to the first be started and having calculated the total alkali from the first determination as sodium carbonate add barium chloride to precipitate the alkali, heat a few minutes and after adding phenolphthalein titrate with N/10 stearic acid. This figure represents the cc. required to neutralize the caustic alkali in the soap and the difference between this and the total alkali will correspond to the carbonate.

Refractive Index of Fatty Acids. The determination of the refractive index of the fatty acid often gives valuable information with reference to the origin of the fat employed in making the soap. This determination is easily made if a refractometer is at hand.

More tests could be applied by the pharmacist to enable him to differentiate genuine and spurious olive oil soaps; the above in addition to being sufficient are simple, accurate and easily performed and should therefore be considered for inclusion in the Pharmacopœia.

PRELIMINARY EDUCATION OF THE STUDENT OF PHARMACY.

C. T. P. FENNEL, PH. G., PHARM. D., CINCINNATI, OHIO.

The early history of pharmaceutical education proves that the aim was to supplement and not to supplant apprenticeship. Prior to the Civil War high ideals were maintained, but soon thereafter these were forgotten. Many conditions were conducive to this fact. The rapid expansion of the country, the revival of commercial interests, the vast opportunities for the rapid acquisition of wealth, all tended to the decay of the apprenticeship system. Commercial exploitation infected all ranks and schools of all kinds were no exception. It was the period of revival of dormant colleges of pharmacy which had aimed at high ideals and still maintained them by a code of ethics unsurpassed by any profession. Unfortunately, the spirit of the period did not recognize their sufficiency. Other colleges devoted to the study of pharmacy opened without any consideration of supply and demand.

Every method of commercial exploitation was resorted to, alluring advertisements, quite commonly exaggerations and not infrequently outright misrepresentations were the means used to attract the ignorant. Such conditions could not last and soon movements of reform began. The pioneers of pharmaceutical education prevailed. Candidates for matriculation in a college of pharmacy were subjected to an examination in the branches of the ordinary grammar school to determine their fitness for admission. This aim towards better qualified students was a movement in the right direction, but like all other reforms under competitive environments, soon became a farce.

The less conscientious saw to it that all applicants were qualified to join the ranks of pharmacy. The failure of this first movement of reform resulted in the drafting of pharmacy laws "for the benefit of the dear public by keeping out incompetent druggists from *other* states." Each state in succession lauded itself in the belief that it was the mecca for all undesirable material of adjoining states. Those that were not quite so egotistical hoped to obtain relief from poor material furnished by colleges of pharmacy and consequently also became staunch supporters of pharmacy legislation. On the other hand, those connected with teaching institutions of pharmacy of commercial exploitation perceived great danger to their financial interests and hence made every effort to incorporate in such laws a clause exempting college graduates from Board examinations. Efforts in this direction proved failures, although a few state pharmacy laws still grant this exemption. Pharmacy legislation by systematic commercial exploitation materially enhanced the financial status of many of these institutions.

It was the period of hot-house development of schools of pharmacy. Scientific schools strongly supported by state finances violated their code of ethics and fostered this commercial exploitation in order to increase their annual state appropriations. Scientific pharmacy was taught in the most entertaining and instructive manner. Education was made easy and profitable by "Quiz Compends" and "Essentials of Pharmacy." These inducements, combined with the general belief that pharmacies were gold mines, brought the most ignorant into the field

of pharmacy. Upon this commercial basis dividends were the essentials and hence the cheapest and most profitable methods to the owners of the institution were maintained. This hot-house period increased the number of schools twelve hundred percent, while the total number of students enrolled yearly barely represents seven thousandths percent of the total population. Preliminary education of a fair degree, combined with the manipulative skill of applied pharmacy were *presumed* and accepted with the knowledge of their being a negative quantity. Again the cry for a higher education was raised, and after many pros and cons, a definite amount of preliminary education was set as a standard for admission to colleges of pharmacy. This demand was not a voluntary one on the part of the colleges. This requirement consisted of one year high-school education or its equivalent. Ten years of agitation finally culminated in an enactment by New York State which induced the majority of pharmacy schools to scramble for recognition.

Many of them have been prolific in promises but very slow in their fulfillment, notwithstanding the fact that some thirty of these institutions have formed a cordon of teaching faculties to enforce all the requirements that will tend to make better pharmacists. Perusal of the proceedings of the thirteenth annual meeting prove conclusively that not all is harmony.

Educators must recognize that the student body is imbued with the idea that they become pharmacists by following the routine work of the present day pharmacy, and that the only qualification is "legal qualification." The pharmacy laws of every state in the Union leave this impression—students apparently care nothing for the "theory and practice of pharmacy," display no desire or curiosity to master its principles, since the routine work does not demand it, and only resort to colleges of pharmacy when they discover that Quiz Compends and Essentials are not productive of legal qualification. On the other hand, the old line of colleges of pharmacy, acting with the best faith and thoroughly honest in their efforts to raise the standard of education, have increased their facilities and the opportunities for acquiring true pharmaceutical knowledge upon the broadest basis and yet fail in their efforts owing to their too broadening field. The student body have recognized long ago that boards of pharmacy examinations are not in keeping nor within the scope demanded by colleges. That a low estimate is made of pharmacy, its schools and its boards of pharmacy, no one will deny. What are the environmental influences surrounding prospective students of pharmacy to produce this low estimate of the science of pharmacy? Psychologists as well as educators have shown that there is an amazing degree of mental retardation among the school-going population of the United States. Astounding figures are given that are indicative of a gross error. Where is the error? In the American race itself or in the general educational system? Twenty-five years of study and analysis of the recruits to the student ranks in pharmacy have shown a lamentable and constant decrease in culture. Lack of self respect, disrespect to the institution, its rules of common order and decency, even a spirit of condescension in enrolling with the institution, pervades. Unfortunately our public schools of the present day do not produce competent, reliable or thorough knowledge. The whole system of training is faulty and exists solely through the grace of political influence. It is a means of securing political

prestige by catering to the prejudices, ignorance and credulity of the masses. In the very beginning the rod is spared, not for humanitarian reasons, but for fear of antagonizing the voting prerogative of the parent. Idleness, indifference, carelessness and snobbery are condoned and sanctioned for the same reason. Extravagance is encouraged, discontent for the home surroundings is sown by the excessive ornamentation of school buildings and their surroundings; moral culture is ignored completely.

Development of character essential to educational progress finds no consideration and hence it is no wonder that even graduates of our high schools, having all the necessary counts preliminary to the required admission standard of a college of pharmacy, cannot compose a letter clearly and accurately expressing their thoughts; cannot apply the simplest rule of proportion or percentage; in fact, are totally deficient of the power "to think."

The conditions as they exist clearly demonstrate that pharmacy of the present day must be considered from two viewpoints, namely, commercially and professionally. The commercial aspect simply requires the same training that makes any other business man a success in his field of labor. The professional aspect requires particular training in science and this in turn demands more than the common preliminary training. In this there can be no half-way measure; the broadest preliminary education is essential for the proper conception of a professional knowledge of pharmacy. Credentials of preliminary education based upon counts, credits or hours are not worth the paper written on. Legislation presuming a definite kind of preliminary education as a prerequisite to college admission or to state board examinations will never cancel the deficiency in educational quality.

Colleges of pharmacy as well as boards of pharmacy should fully ascertain the educational qualification of the applicant, but it does not concern them how, when or where the qualification was gained. Individuality in colleges as well as in boards of pharmacy will soon assert itself and as in former days each tub will stand upon its own bottom. Each body must adopt its own method of discrimination. It may be guided by suggestions or set rules depending upon environment and economic conditions. They must be qualified to gauge the mental qualification and possess the moral courage to reject if necessary. As a guide to the conservation of professional pharmacy, the Pharmaceutical Syllabus offers a means thoroughly in accord with pharmaceutic progress. This syllabus aims to group the studies essential to the proper conception of pharmacy around a common center. That each of these studies may retain its individuality, it was found advisable to permit expansion or contraction according to the viewpoint of those directly concerned in the teaching of the branch. Secondly, that true depth of knowledge and not a smatter of knowledge be acquired, three grand divisions were instituted, namely Materia Medica, Chemistry, and Pharmacy, with variable time limits for their elucidation. These divisions were further subdivided into twenty-six branches to produce the desired elasticity for individuality of teachers. Minds may differ as to the time limits or allotments of each branch of study, but it is of importance how that time shall be employed, whether wholly didactic, or wholly practical, whether continuous or interrupted.

Under the present status of pharmaceutic legislation, the difficulties of con-

ducting a school of pharmacy are steadily increasing. The demands upon student as well as institution are increased. The expense to the student for the opportunities offered is materially decreased, while the expense to the institution is increased more than five-fold and yet the supply of students is less. That such should be the case is but natural and but the sequence of unnatural, unjustifiable and uncalled for competition. It cannot be remedied by forcing a time limit of twenty-five weeks in two separate years, under the plea of helping the student on the installment plan, ostensibly to give him a chance to earn his living and tuition, but in reality to keep the institution alive. These self-sacrificing institutions increase their probabilities of securing the student's total earning capacity in a period of two and even three years, when the actual time devoted to the whole course amounts to one hundred and fifty to two hundred days of six hours each. It is a method that does not redound to the glory and honor of pharmaceutic education. When dollars and cents are the consideration, the student body can figure as well as the best mathematician and hence avoids schools until forced into them to maintain his earning capacity. The opportunities for acquiring pharmaceutic knowledge must not be restricted to time or place; some acquire it in one year while others may take ten years. Under present conditions, boards of pharmacy are the censors of this knowledge and aim to harmonize the commercial and professional status of pharmacy, and as a result true pharmacy does not progress. To remedy the existing evils, all state pharmacy laws need revision. Druggists with specific privileges and pharmacists with specific education must be created; both under the control of a State Commission composed of qualified men and having the means at their disposal to carry out the provisions of legislation.

SCHOOLS, STATE BOARDS AND PREREQUISITES.

J. F. RUPERT, HOSPITAL STEWARD, U. S. NAVY, ANNAPOLIS, MD.

Pharmacy certainly is associated with troubles in this day of persecution and prosecution. Every pharmacist is likely to be charged at some time or many times in his career with practices beneath the standing of manhood and with being a corruptor of morals and a parasite, preying upon the superstitions, ignorance and innocence of an uninformed public. The responsibility for this situation must be charged to a certain few, who are guilty of all these offenses, and have brought disrepute and disgrace upon our calling. Added to this the passage of the pharmacy laws has caused a further distrust in the minds of many people who do not understand their intent. Next, the "Pure Food and Drugs Act" caused another spasm of distrust and open accusation. Now the anti-patent medicine crusade is taken by the public to be directed against the poor, helpless, struggling druggist. It is a case of "The man is down, don't hit him—kick him!"

Must I mention further, another thorn in the flesh of the druggist—the question of counter prescribing? Here, some unscrupulous ones have incurred the dis-

pleasure of the powerful and well organized medical profession, the very people we desire above all others to have with us. The anti-narcotic laws and liquor legislation and pure drug crusades thrown under the nose of the public at times have not helped to make things better, as all of these are taken as evidence of prevailing conditions in the drug trade and of the insincerity and criminality of the ever persecuted druggist. Add a little financial difficulty and just a little domestic trouble, and the existence of Mr. Druggist will certainly not appear to be the most enviable.

To these external discomforts are added internal intricacies in the way of preliminary educational requirements, prerequisites, pharmacy school standards, uniform state board examination, and what not! Now, according as to how we clear all these hurdles in our path, so will our troubles and distresses in the future be relieved.

These internal troubles have largely been brought upon ourselves, I believe, in the attempt to correct the erroneous ideas of the public. But in our anxious attempts to remove these erroneous ideas we have hopelessly muddled ourselves between professionalism and commercialism. On the one hand, we readily understand that commercialism is essential to the density of our trousers' seats, while on the other hand, professionalism rather hovers over our heads, not always settled complaisantly.

In connection with pharmacy training we have, on the one hand, preparation (schools and home study) for fitness, and on the other hand, determination of that fitness (state boards). Now, if our boards are thoroughly qualified to determine that fitness, why establish prerequisites of any nature? A man without a common school education will have the utmost difficulty in attaining to a position of fitness as determined by a qualified board. As regards prerequisites, I would make the same general remark. On the other side of this question, I want to say, that if we set the standard of work for the pharmacy schools, and provide for the preliminary general education of the student, and then require graduation from these schools, why put the man to an examination?

I do not believe we should make any comparison with the dental, medical or veterinary professions. Their work as professional men covers much more than ours, and I think it is just this mistake we have made in the past. We have problems peculiar to our work and we must solve them by our own initiative, rather than by following the lead of other professions.

Personally I believe that a young man with a high school training, or even less, who is a student and has good stuff in him, working in a small store where he will have considerable time to study, or in a large store where he will have from two to five hours per day to study and is allowed a little space and material to experiment with, together with his observation at the prescription counter, the study of drug journals and general recipe work with good texts on general chemistry, pharmacy and materia medica, all supplemented with the use of eyes and ears and the most commendable virtue of stick-to-it-ive-ness, will make a pharmacist, as good as any state board might require. Schools do not make pharmacists.

I believe the schools are necessary for special training and I do not want to be understood as belittling their value. No young man can do better than to

take a course at a good school, but I would recommend him to do this after a year or two in a store. This will insure much more from the course and will reveal to him just what will be required when his school work is over.

Above all things, I would not stand for allowing two years at school to equal three, four or five years, store experience. Three years' experience, I believe, should be established as a minimum requirement. Experience in a store has value in training which cannot be equalled by any number of years of school work. The firing-line is what "fixes" a man's nerves. All the drilling and technical schooling in the world never made a soldier, but the two must go together.

Not less than two years' store experience in any instance, should be required; however, much credit may be given for school work. Book knowledge might largely make a laboratory man, but it will not make a commercial pharmacist or prescription clerk. In a drug store a man is against a thousand perplexing propositions, and certain qualities of disposition and mind are required to make a reliable, trustworthy and competent man, able to cope safely and successfully with all situations. A man might pass a brilliant examination on paper on technical subjects, but here the ability of the state board to determine the fitness of the man to "practice pharmacy" is concerned.

Selling poisons is a business surrounded by cares and responsibilities that can only be properly appreciated through experience. Compounding prescriptions back of a store counter, to be paid for, and taken home by mother or father for the treatment of disease of loved ones is a more important, responsible and real thing than the same performance at the school bench.

I think the statement made by the Syllabus Committee, as published in the "Bulletin of Pharmacy" in July, 1911, by E. O. Engstrom, as follows, is of some interest in this connection:

"In the determination of the fitness of any applicant to receive a license to practice pharmacy all important facts of his educational history, practical experience, and technical services should be taken into account, including his preliminary general education, his special education in pharmaceutical and other related technical schools, his practical experience in pharmacy and the result of the examinations he has passed, and an average of these three general factors, each assigned its appropriate value, should be adopted as the passing grade."

The practice of pharmacy is very much the same all over the states. Special preparation is naturally necessary, but this special preparation should be in lines which have a direct relation to the practice of pharmacy. Urinary analysis, bacteriology, food examination, analytical chemistry, manufacturing and commercial chemistry, are all special professions, and I do not believe come within the province of State Boards of Pharmacy.

I believe the schools are necessary as institutions for special training, but prerequisite laws will practically bar out many worthy men.

Let us suppose a struggling young man with a little money is married. He is not registered, but has applied himself to study and work and has qualified himself for his profession. He could pass a good examination but the law says he must graduate first. He simply can't afford it. What is he to do? A young man supporting his parents or others of his family might find himself in the same circumstances.

I want to quote from a statement lately made by the "Western Druggist," with which I am on record as being in perfect accord:

"The advocates of prerequisite legislation proceed on the assumption that the colleges have a monopoly of the work of education and without a college course no man can acquire competency in the art of dispensing. The professional standing of thousands of non-graduates of the past and of the present is proof of the fallacy of this assumption, but even conceding that it be warranted in a majority of cases, the exceptions today are sufficiently numerous to make the incorporation of such assumptions in state legislation a grave injustice. Moreover, these two considerations are a governing force:

"First, any man desiring to enter the practice of pharmacy has a constitutional right, if qualified, to demonstrate his qualification before a board of pharmacy and to have those qualifications made effective by the receipt of a certificate of registration conferring the right to practice. Pharmacy laws are not made for pharmacists nor for colleges, but for the protection of the public against incompetency in dispensing medicines. To the extent therefore that such competency is insured the public is protected and no pharmacy act can constitutionally go farther.

"Second, prerequisite legislation means the subordination of the boards of pharmacy to those colleges which under such legislation may dictate to the boards whom they may or may not accord the privileges of an examination. In other words, private institutions are given power over the representatives of the people on the boards of pharmacy, thus surrendering the public interest to private interest—a perversion of legislation not to be tolerated in a free country."

To sum up:

1. If we require the graduation prerequisite, certainly the boards should establish the standards of the schools.

2. Not less than two (2) years' experience in a store (with school work) should be required. Without school work not less than three (3) years' store experience.

3. If we establish preliminary education and graduation requirements, and set the standard of the school, and require store experience, why require examination at all—are not the requirements sufficient?

4. If it is possible for a board of pharmacy examiners to "thoroughly determine the fitness" of the candidate, why establish any requirements at all, other than store experience and examination?

I am not in favor of prerequisite laws. I believe they work great injustice to many worthy men.

CORRESPONDENCE COURSES IN PHARMACY.

L. E. SAYRE, LAWRENCE, KANS.

At the last meeting of the American Pharmaceutical Association in the Conference of Pharmaceutical Faculties there was a motion offered which, if passed would have tended to put a stigma upon every instructor who would give or offer instruction in any pharmaceutical correspondence course. Fortunately, the motion, after a little acrimonious debate, was lost.

Much may be said against correspondence courses. That which applies to one

applies to all. But much may also be said for them. It depends upon the point of view whether one may favor or oppose them. It is the writer's purpose to take the favorable view point in the present article, and what he may briefly say may be regarded as an expression of opinions formed as a result of experience.

Some years ago (1895) I had the pleasure of contributing to a series of correspondence lectures for a correspondence course published in one of the leading pharmaceutical journals. I considered myself fortunate in this work to be associated with such men as H. H. Rusby, Henry Kraemer, Dr. Oldberg, Dr. Charles Rice, and others. I happen to have at present a young man in the University School of Pharmacy who, several years ago, took this correspondence course. This young man next year will be a candidate for the B. S. degree in pharmacy. He will have then completed the four years' course. I asked him to state frankly his opinion of such a correspondence course. He said that he took this when he was clerking and found it exceedingly helpful. It gave him a taste for study and furnished an incentive to attend a school of pharmacy where he could obtain what the correspondence course is not designed to give, a thorough, systematic training. This testimony is practically a repetition of the statements of many others who have taken such courses offered by different institutions. It is not an uncommon thing to have students who had finished a correspondence series come to the university for further study.

In a state such as Kansas (400 by 800 miles) of sparsely settled communities with an immense number of very small towns, it becomes an interesting, if not a serious problem how to reach these various towns and hamlets. For one situated as one is at the State University, whose ambition is to extend the educational influences to the remotest corners of the state, one has to use his ingenuity to reach out to these various districts with education of a technical type. Many of the young men and young women, for various reasons, cannot attend the University or any institution of such a nature, hence it is putting an increasing demand upon the institutions to provide for such as desire instruction such as a university may offer. The criticism of many interested in the training of young men and young women in pharmacy has been that the University of Kansas was blocking the way of pharmaceutical education by requiring higher attainments than the ordinary boy or girl could offer, and as a consequence the Extension Division of the University of Kansas, created by the Board of Regents, conceived the idea of adding to its numerous courses in the various departments that of pharmacy, making itself responsible for such a course and in the support of its efforts asked the cooperation of the School of Pharmacy. It formulated such a course, consisting of 120 assignments, which, if properly studied, would be equal to at least 720 hours of work. This special course the Governor of the State, the Chancellor, and the Board of Regents of the University heartily approved. In addition, the Board of Pharmacy of the State of Kansas approved the efforts by a formal resolution. This extension work the members of the Board of Pharmacy believe will raise the educational average of applicants seeking registration through the Board. Undoubtedly there are many who will surely become so-called pharmacists without school training or without even correspondence training. It stands to reason that they will be the better pharmacists if they take advantage of either.

If we were to summarize the advantages of such a correspondence course we would say that it provides many opportunities for those who could not attend the University. Among them are: (1) Home-study courses for persons who contemplate the vocation of pharmacy, but lack some of the entrance requirements exacted by the State Board of Pharmacy; (2) means of becoming a registered assistant pharmacist; (3) means of preparing for registered pharmacist's examination; (4) means of keeping abreast of the times in those subjects applicable to the practice of pharmacy, in which science is making additions to our knowledge.

For those who are interested in the details of correspondence courses, we might cite as an example one of the courses in Materia Medica. This one embraces classification, physical description, and chemical constitution of crude drugs and their physiological properties, methods of dispensing them, their action, and their physiological relationships.

As previously stated, it depends on the point of view whether one may favor or oppose such courses. No one will deny that the ideal course in pharmacy is the one which is known as the regular course, as offered in a well-established curriculum approved by the trained educators of the Conference of Pharmaceutical Faculties. No one who is an advocate of correspondence school work should be considered as inconsistent if he enthusiastically urges the necessity of such ideal courses for the proper training of pharmacists. On the other hand, if one takes the point of view as above referred to—that of striving to reach those who can ill afford, and hence will not attend a systematic course and receive its superior training, one is compelled to take the position of advocating most strongly such courses as are offered by Extension Departments.

AN IMPROVED METHOD FOR ENFORCING PHARMACY LAWS.

LOUIS SCHULZE, PH. G., BALTIMORE, MD.

As we are constantly reminded that the present system of conducting examinations, supervision of pharmacies (as to whether or not competent persons are in charge) and prompt prosecution of violations, are not as satisfactory as they might be; having had nine years' experience as a member of the Board of Pharmacy as at present constructed, the writer has come to the conclusion that a radical change in the general order of boards would be highly beneficial in more fully protecting the public from incompetency on the part of those engaged in conducting stores, and would also elevate pharmacy in the eyes of the public.

It would no doubt be better if the present system of a board consisting of five were entirely abolished and in its stead created a Commission of Pharmacy, into whose hands should be given all matters pertaining to pharmacy in the state, namely, the enforcement of the pharmacy laws, poison and anti-narcotic laws, pure drug laws, and any others that might be enacted to protect the public against incompetency on the part of those engaged in pharmacies or the sale of

impure, deteriorated or inferior drugs. This commissioner should be a retail pharmacist actively engaged in the business, and having had at least ten years' experience as proprietor of a pharmacy, being such at the time of his appointment; he should be required to give at least eight hours per diem to his official duties, be required to visit either, personally, or through one of his agents, every pharmacy in the state at least four times annually, at least one visit being made by himself; he should be provided with an office and necessary office force; also a properly equipped laboratory, and laboratory force, competent to make necessary examinations of drugs, not only as to their purity but in the case of so-called patent or proprietary medicines, as to their contents, so as to be able to state whether they are safe for general medication or not; one month prior to the time of examination of candidates for registration, in conjunction with the dean of the school of pharmacy of the state (if recognized as such by the Conference of Faculties) or where there are two or more such schools, the one nearest his headquarters; or in states where there is no such school, with the President and Secretary of the State Pharmaceutical Association, he should select five retail pharmacists in actual practice, who, in conjunction with himself, should select the questions for the ensuing examination and conduct the same, together with such assistants as might be necessary, giving at least two days of eight hours each to the examination, one day, or more if necessary, being given to a thorough test of the candidates' ability to recognize and identify drugs and chemicals, according to the tests set forth in the U. S. P., the preparing of official preparations and compounding of prescriptions; five days or less after the last day of the examinations, the names of the successful candidates should be published, in one or more of the leading newspapers of the state; and each candidate receive a notice as to whether he was successful or not, from the office of the commissioner, whose name should appear on all certificates issued.

The commissioner should be appointed for a period of five years, and besides all expenses of his office and official duties, such as traveling expenses, etc., receive a salary commensurate with his work; those chosen to conduct the examinations should be paid at the rate of $5 per day, the time not to exceed ten days at any one time of examination.

SCIENCE AND THE SCIENCES.*

CHARLES ZUEBLIN, BOSTON.

We are beginning to see that democracy is not, as was thought at the beginning of the last century, the condition of society or organization of government which would secure the greatest good of the greatest number; the greatest good of all is now our ideal. We are no longer content with the splendid definition of political democracy enunciated by President Lincoln, "a government of the people, by the people, and for the people." We want something more than po-

*Abstract of a lecture delivered before the Massachusetts College of Pharmacy, Boston, May 15, 1913.

litical democracy, and perhaps a discussion of education as a preparation for this fuller democracy may of itself help to explain democracy—democracy which is not government of, for, and by the people merely, but the life of all, by the cooperation of all, for the welfare of all.

Education necessarily is modified to meet the demands of a progressive civilization. New institutions require new methods, and both the method and content of education, therefore, change with civilization's onward march. In the last century we observe two great social phenomena which were fundamental in their influence on our educational system, speaking now not merely of schools, but of all which goes on through life. These two phenomena are the Industrial Revolution and the Transformation of Domestic Life.

With the eighteenth century in Great Britain, and extending to the rest of the western world in the nineteenth, there occurred an industrial revolution. The most significant of the transformations of the educational system are the introduction into the curriculum of science, in its various applications, evolutionary philosophy, pure science of various kinds, applied science, and the mere inferences of science, which come to us out of the air almost, so that we think in scientific terms, even if we have not minds trained in science.

We are in the presence today of a decay of the influence of the dead languages and mathematics. Whether this is legitimate, whether it will be continued, remains for the scientists and pedagogues to investigate, but we are in the midst of their decadence and rejoicing in it. Not that we believe that it is not good to study these languages, but that in the multiplication of indispensable subjects today these are becoming increasingly non-essential for the mass of the people. If you only stop to think you will appreciate the fact that many do not stay in school long enough to distinguish one writer from another. It cannot matter much that a few have read the Anabasis, with some scraps of Homer, all of which they have successfully forgotten. As for mathematics, we recognize that we spend too much time over arithmetic, solving problems which the higher mathematics will enable us to solve much more easily. Intellectual discipline is the only purpose of these things, it would appear, and there are other ways of getting intellectual discipline. It can be done in any useful occupation, and the best discipline of all we get from science.

The reconstruction of philosophy is going to grow out of average working men, getting discipline from their machines, which the older people did not get from the study of the classics and mathematics. This discipline may be very imperfect, because the workman is not led to see its application. He gets laws, but the application of them is difficult.

The school must be an organic part of the daily life, which means that the school must be a cooperative institution; competition must be subordinated. The old method was to make each child independent, by measuring his intellectual acquisitions apart from those of his companions, and making the assisting of one's companions a crime. In the school of the future, to assist will be a mutual benefit. In all the departments of wood-working it is possible for the children to assist each other with benefit to everybody. But if we employ examinations as a measure of mere quantitative acquisition, there can be no mutual assistance. It may be that cooperation will never eliminate competition,

but we cannot go on with a highly organized society where there is no mutual interdependence as a feature of it.

What are some of the possible applications of education to the social science of today, which must be the corollaries of the use of science in the schools. The true place to begin is with births. We do not know how children come into the world, what they are like, what they give promise of being from the standpoint of heredity and environment. We cannot answer these purely quantitative questions—how many children there are and of what ages. There is the decennial census, which tells us a few years after, a few of the things we want to know when they have ceased to be true, for which we pay an immense sum of money to political appointees. If we are to have a democratic government let us have a permanent census bureau keeping us informed all the time about everybody. In that way we should lay the foundation for a scientific treatment of life.

The day is coming when we shall want to use the scientific knowledge we are acquiring so that every child that is going to come into the world will have at its entrance the presence of a government physician to see that it is done properly, and that the child is guaranteed life. The mother may have as many private physicians and other people as are within the command of her pocketbook, and whom she may regard as indispensable, but government subsidies will guarantee a decent entrance into the world. That is a perfectly legitimate requisite on the basis of the scientific knowledge we have. Does that seem Utopian? We already impose penalties for failure to report the death of people. If it is concealed, we look into it and suspect a crime. Surely it is more of a crime not to get children properly into the world.

Children will no longer dread the schools when we begin to use our scientific knowledge in treating these children. We are beginning to have nurses and medical inspection in the schools, and to give the pupils good food once a day, though there are some who would cry out against these things as paternalism. Meanwhile what are we going to do about it? Are we going on in the same old way, breeding no better children, giving all our money to increasing our scientific attainments in the rearing of dogs, horses, cattle, and poultry?

This country suffers from more serious accidents than any other country in the world. It is time we had the data to show to the world why these things happen, and then they will not happen any more. It is almost incredible to think that in a school in Cleveland quite recently two hundred little children had their lives snuffed out, while in a Pennsylvania town a similar holocaust had taken place only a few weeks before, and the disaster at the Iroquois theater in Chicago occurred only a couple of years before. It is incredible that these things should be repeated in the same country, when we know how to protect buildings from fire, and we know what sanitary precautions are, and we do not take them.

We shall go on in this application of science still further. We shall begin to distribute our population. We know where we need people today, and know where we do not need any more people. We do not need any more people for a great many years in Philadelphia, New York, Boston, or any of those seaport towns, and these people who come here should be taken away to the South, the West, and the Northwest, where they are needed.

That will also suggest the problem of unemployment. We shall know where

people are wanted, and see that they are there. We ride in our great, beautiful trains from Chicago to New York, where you get every few minutes the record of the stock market. If you can distribute that kind of information, surely you might distribute some industrial information to the settled towns. It is not necessary to elaborate this further, but we shall culminate by making some provision for the old age that comes to those people who are fortunate enough to live long enough. We shall have pensions for the aged which will enable them to live decently, so that they will not be a burden upon youth, as well as seeing that youth is not dependent upon them.

The relation of education to science means to us a superior discipline in the school for every boy and girl, keeping them there longer in order that they may get the benefits of this science, then putting them into industry better trained, and then extending this democratization of science until it ramifies through the whole of life.

A STRIKING OBJECT-LESSON IN HEREDITY.

The long-looked-for history of the Kallikak family* has at last come from the press of the publishers. Under the auspices of the Training-School for Feeble-Minded at Vineland, N. J., Dr. Henry H. Goddard has investigated and compiled the results of his work in the heredity of this most remarkable family. During Revolutionary days, the first Martin Kallikak (the name is fictitious), descended from a long line of good English ancestry, took advantage of a feeble-minded girl. The result of their indulgence was a feeble-minded son. This son married a normal woman. They in turn produced five feeble-minded and two normal children. Practically all of the descendants of these defectives have been traced as well as those of the two normals.

From both normal and defective descendants of this union came a long line of defective stock. There were 480 in all. Of these thirty-six were illegitimate, thirty-three sexually immoral, twenty-four confirmed alcoholics and three epileptics. Eighty-two died in infancy, three were criminal, eight kept houses of ill fame and 143 were distinctly feeble-minded. Only forty-six were found who were apparently normal. The rest are unknown or doubtful. But the scion of the good family who started this long line of delinquent and defective progeny is also responsible for a strain of an entirely different character. After the Revolutionary War was over, he married a Quaker girl of good ancestry and settled down to live a respectable life after the traditions of his forefathers. From this legal union with a normal woman there have been 496 descendants. All of these except two have been of normal mentality. The exceptions were cases of insanity, presumably inherited through marriage with an outside strain in which there was a constitutional psychopathic tendency. In all the 496 there was not an instance of feeble-mindedness. The offspring descended from this side of the house have universally occupied positions in the upper walks of life. They have never been criminals or ne'er-do-wells. On the other hand, there has not been a

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*Goddard, Henry Herbert: The Kallikak Family, a Study in the Heredity of Feeble-Mindedness, New York, the Macmillan Company, 1912.

single instance of exceptional ability among the descendants of the first Martin Kallikak and the feeble-minded girl. Most of these descendants have failed to rise above the dead level of mediocrity, indeed, most of them have fallen far below even this minimum standard.

The fact that the descendants of both the normal and the feeble-minded mother have been traced and studied in every conceivable environment, and that the respective strains have always been true to type, tends to confirm the belief that heredity has been the determining factor in the formation of their respective characters. In the cities the descendants of the legal marriage with the normal woman are physicians, lawyers and prominent business men, while the descendants of the feeble-minded mother are almost invariably found in the slums. In the rural districts the descendants of the normal mother and her consort are wealthy and influential farmers, while the others never rise above the rank of farm laborers and shiftless men and women who are unable to subsist without the aid of charity. Many representatives of the defective branch are inmates of almshouses, while there are no paupers at all among the normal descendants.

In many ways this study of Goddard's far outweighs in importance the famous comparison by Dr. Winship of the Jukes and Edwards families. In that case the simple fact was demonstrated that a good family like that of the illustrious Johnathan Edwards had given rise to innumerable examples of the highest intellectual and moral worth, whereas the criminal Jukes for seven generations contributed nothing to the common good, and cost the State of New York large sums of money. But the Jukes family and the Edwards family had no ancestor in common. Their environment was totally different and they lived in entirely separate communities. Although from sociologic and economic points of view the history of the Jukes family and its comparison with that of the family of Jonathan Edwards has great value, it is of but scant scientific importance as compared with that of the Kallikak family, for here a natural object-lesson in eugenics shows unmistakably the manner in which after-coming generations from a given mating receive the characteristics of the dominant strain, which in the elder (illegitimate) Kallikak line was the inferior strain, with only a debased and enfeebled heritage to hand on.—*Journ. A. M. A.*

Reports of A. Ph. A. Committees

REPORT OF THE COMMITTEE ON REVISION OF THE CONSTITUTION AND BY-LAWS.*

CONSTITUTION.

NAME AND OBJECT.

Article I—Name. The name of this Association shall be the American Pharmaceutical Association.

Article II—Object. The object of this Association shall be to unite the educated and reputable pharmacists of America for the purpose of advancing the sciences and art of pharmacy and its professional elevation.

(1) By upholding the dignity and professional standing of pharmacy and the necessity, as a matter of public safety, of restricting pharmaceutical service to those properly qualified by education and training as pharmacists.

(2) By creating and maintaining ethical standards for pharmacists.

(3) By fostering sound pharmaceutical education and proper legislation for regulating the practice of pharmacy and the distribution of drugs.

(4) By regulating the system of employment in pharmacy, so as to prevent, as far as practicable, the evils flowing from deficient training in the responsible duties of preparing, dispensing and selling drugs.

(5) By stimulating investigation and research in subjects relating to pharmacy and allied sciences, and diffusing knowledge by meetings and publications.

(6) By promoting the establishment and uniform observance of correct standards for the identity, purity and strength of drugs, and exposing adulteration, sophistication or misrepresentation in connection with the sale of drugs.

(7) By restricting the dispensing of dangerous and habit-forming drugs to proper medicinal use.

(8) By encouraging relations of good will and respect between physicians, pharmacists and chemists and promoting mutual cooperation of these professions so as to extend their usefulness to the public.

Article III—Members. The membership of this Association shall consist of members, life members, associate members, corresponding members, and honorary members.

Article IV—Officers. The officers of the Association shall be a President, a First Vice President, a Second Vice President, a Third Vice President, a General Secretary, a Treasurer, an Editor of THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, a Reporter on the Progress of Pharmacy, and a local Secretary, all of whom shall be elected annually; the President and Vice Presidents of the Association to be elected by the Association, and the General Secre-

*Presented at the sixtieth annual meeting, ordered to be received and printed in the JOURNAL, and its further consideration postponed until the sixty-first annual meeting.

tary, the Treasurer, the Editor of THE JOURNAL of the Association, the Reporter on the Progress of Pharmacy, and the Local Secretary to be elected by the Council. They shall hold office until the selection of successors.

Article V—Funds. All money received from life membership, together with such funds as may be bequeathed or otherwise donated to the Association, shall be invested by the Committee on Invested and Trust Funds in United States Government, State, County or Municipal securities, the interest of which for any current year only may be used by the Association for its expenses.

Article VI—Amendments. Every proposition to alter or amend this Constitution shall be submitted in writing at one annual meeting, and may be balloted for at the next, when, upon receiving the votes of three-fourths of the members present, it shall become a part of this Constitution. Any proposition to amend the Constitution for the purpose of permitting the expenditure of the permanent invested funds of the Association, shall require a majority of seven-eighths of the members present at a general session.

BY-LAWS.

Chapter I.

MEMBERSHIP.

Article I—Eligibility. Pharmacists, whether in business, retired from business or employed by another, and teachers of pharmacy, chemistry, materia medica or cognate branches, editors and publishers of pharmaceutical journals, official food and drug chemists, whether municipal, state or national, and members of the scientific staffs of pharmaceutical houses, of good moral and professional standing, are eligible to membership, *provided* that any person whose name has been dropped from the roll of members for non-payment of dues may be readmitted after having again made application in regular form, the application being accompanied by the usual fee; or he may be readmitted, without such application on the payment of all back dues; in the latter case his membership shall date from the time when he first joined the Association, as previously printed in the Roll of Members, and notice of such action shall be inserted in the addendum to the Treasurer's report.

Article II—Election. Every applicant for membership must subscribe to the Constitution and By-Laws and have his application, endorsed by two members of the Association in good standing, accompanied by the first year's dues, presented to the Council, when, upon receiving the affirmative vote of three fourths of the members of the Council the applicant shall be elected.

Objections to applications (which must be in writing with the member's name attached) shall be presented to the Council, which shall decide upon the objections.

Article III—Year of Membership. The calendar year shall be the fiscal year of the Association, and any application for membership made during the fiscal year shall apply to the current year. Any application made between June 1 and December 31 may be applied to the *next* fiscal year if stated on the application, and such applicants may receive THE JOURNAL of the Association free until the date of their active membership commences. Publications of the Association distributed free to members shall be sent for the fiscal year selected.

Article IV—Election of Delegates as Members. Any accredited association, organization, or institution whose credentials are recognized by the Council, shall be entitled to send five delegates as its representatives to the annual meeting who, if present, may become members of the Association on signing the Constitution and paying the annual contribution for the current year; *provided* that the provisions of this article shall not be so construed as to elect any one against whom well-founded objections may be raised, or to reinstate any member whose name shall have been dropped from the roll for non-payment of dues; nor shall any one who has been expelled from the Association be received as a delegate. All credentials should be sent to the General Secretary at least two weeks in advance of the annual meeting.

Article V—Annual Dues. The annual dues of each member shall be three dollars, payable in advance to the Treasurer. Members neglecting to pay their dues for more than sixteen months shall be dropped from the roll of members.

Article VI—Annual Dues and Subscription. If the annual dues (three dollars) and the annual subscription to THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION (three dollars) be paid, *in advance, at the same time,* a reduction of one dollar shall be allowed.

Article VII—Life Membership. Any member of the Association who shall pay to the Treasurer the sum of $50.00 during the first year of membership, and also any member not in arrears, who after ten years, shall pay the sum of $40.00, or after fifteen years the sum of $30.00, or after twenty years the sum of $20.00, or after twenty-five years $15.00, and any member who has paid annual dues for thirty-seven consecutive years, shall become a life member, and shall be exempt from all future payment of dues.

Life members may obtain the JOURNAL of the Association as provided for in Chapter VIII, Article VI.

Article VIII, Associate Membership. Teachers in medical schools, editors of medical journals, medical men who are members of the American Medical Association, and representative teachers and students of the sciences who are not eligible to regular membership, may be elected associate members under the same conditions as apply to general membership. Associate members shall not be required to pay dues, nor be eligible to hold office or to vote, but they shall be required to make an annual subscription of three dollars, for which they shall receive the JOURNAL of the Association.

Article IX—Corresponding Membership. Any pharmacist, chemist or scientist who may be deemed worthy may be elected to corresponding membership. Corresponding members shall not be required to pay dues, nor be eligible to hold office or to vote, but they shall be expected to make contributions to the JOURNAL of the Association, and shall receive the JOURNAL of the Association without charge.

Article X—Honorary Membership. Any pharmacist, chemist or scientist, who may be thought worthy of such distinction, may be elected to honorary membership, but not more than three honorary members shall be elected in any one year. Honorary members shall not be required to pay dues, nor be eligible to hold office or to vote. They shall receive the JOURNAL of the Association without charge.

Article XI—Certificates of Membership. On the payment of three dollars a member shall be entitled to receive a certificate of membership on paper signed by the President, one vice-President, the General Secretary and the Treasurer, or on the payment of five dollars, the certificate issued shall be on *parchment.*

Article XII—Resignation. Resignations of membership shall be made in writing to the General Secretary or Treasurer, but no resignation shall be accepted from any one who is in arrears to the Treasury.

All resignations shall be acknowledged in writing by the officer who receives them, and shall be reported to the Council.

Article XIII—Expulsion. Any member may be expelled for improper conduct or the violation of the Constitution and By-Laws of the Association, but no person shall be expelled unless offered a hearing, and then only upon two-thirds of all the votes cast at a general session.

Chapter II.

THE ELECTION OF OFFICERS AND COUNCIL MEMBERS.

Article I—Election by the Association. Nominations for the offices of President, First Vice President, Second Vice President and Third Vice President to serve for one year from the next annual meeting, and three members of the Council to serve for three years from the next annual meeting, shall be made annually by the Committee on Nominations, within two months after the adjournment of the annual meeting.

These names shall be submitted by the General Secretary by mail to every member of the Association, together with a request that the member indicate his preference on a ballot enclosed for the purpose, and return the same by mail within one month from the date of issuing the letter containing the nominations and the ticket.

The ballots received shall be sent by the General Secretary to the Board of Canvassers, who shall determine the results of the election, and certify the same to the General Secretary.

The results of the election shall be announced by the General Secretary in the JOURNAL of the Association.

Article II—Election by the Council. The General Secretary, the Treasurer, the Editor of the JOURNAL of the Association, the Reporter on the Progress of Pharmacy and the Local Secretary shall be elected annually by the Council at the annual meeting.

Chapter III.

THE PRESIDENT AND VICE PRESIDENTS.

Article I—Duties of the President. The President shall preside at all the sessions of the Association, except those of the Sections, and shall perform such duties as custom and parliamentary usage require.

At the first session of the annual meeting at which he presides, he shall present an address on such subjects as he may deem of importance to the Association, and he may, at any time, make suggestions in writing to the Council or to any standing or special committee.

He shall sign certificates of membership and, when necessary, authenticate by his signature the proceedings of the Association.

He shall appoint all the committees not provided for in the by-laws or otherwise by the Association.

In the absence of the General Secretary or any other officer of the Association, he shall appoint a General Secretary or other officer pro tempore.

Article II—Duties of the Vice Presidents. The Vice Presidents shall assist the President in the performance of his duties; and in the absence or inability of the President to serve, the Vice Presidents, in the order of rank, shall officiate in his place. In the event of death, resignation or removal of the President, the vacancy shall be filled by the ranking Vice President.

Chapter IV.

THE GENERAL SECRETARY.

Article I—Salary. The General Secretary shall receive from the Treasurer an annual salary not to exceed $1200, and also the amount of his expenses incident to the annual meeting of the Association and attendance upon the meetings of pharmaceutical or scientific bodies in the interest of the Association, such expense not to exceed an appropriation by the Council for this purpose.

Article II—Duties. The General Secretary shall give members due and timely notice of the meetings of the Association in the JOURNAL of the Association; and, in conjunction with the Local Secretary and the Secretary of the Council, he shall prepare, for publication, the program of the annual meeting, which shall be submitted to the Council for approval.

He shall keep the minutes of the proceedings of the general sessions and carefully preserve, on file, all reports, essays and papers of every description presented to the Association, and shall be charged with the necessary correspondence.

He shall sign certificates of membership and verify the credentials of delegates.

He shall notify the members of the committees of the Association of their appointment and the duties assigned them.

He shall cooperate with the Committee on Nominations and also the Board of Canvassers, and promptly announce the results of the annual election in the JOURNAL of the Association.

He shall distribute such publications of the Association as may be assigned him, under the direction of the Council, and perform such other duties as may be required.

Chapter V.

THE TREASURER.

Article I—Salary. The Treasurer shall receive an annual salary not to exceed $1000, and also, the amount of his expenses incident to the annual meeting.

Article II—Duties. The Treasurer shall collect and take charge of all money, securities and deeds belonging to the Association which may come into his possession and shall hold the same subject to the direction and disposition of the Association.

He shall pay no money except upon the written order of the General Secretary accompanied by the proper vouchers.

He shall hold, sign and issue the certificates of membership.

He shall report to the Council, previous to each annual meeting, the names of

delinquents or such members as have failed to pay their annual dues for one year after due.

He shall present a statement of his accounts at each annual meeting of the Council, that they may be audited.

Article III—Bond. The Treasurer, in order that he may qualify for the office to which he has been elected, shall file a good and sufficient bond or bonds for such amount as the Council may require for the faithful performance of his duties as Treasurer, this bond or bonds to be signed and executed by one or more bonding or fidelity insurance or guaranteeing companies acceptable to the Council.

Chapter VI.

THE EDITOR OF THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Article I—Salary. The Editor of the JOURNAL of the Association shall receive an annual salary to be fixed by the Council.

Article II—Duties. The Editor shall have charge of the editing, publication and distribution of the JOURNAL, subject to the direction of the Committee on Publication.

In case of illness or other inability of the Editor to carry on the work of the JOURNAL, the Committee on Publication shall make the best arrangements possible to continue the work.

Chapter VII.

THE REPORTER ON THE PROGRESS OF PHARMACY.

Article I—Salary. The Reporter on the Progress of Pharmacy shall receive an annual salary not to exceed $1200.

Article II—Duties. The Reporter on the Progress of Pharmacy shall prepare, under the direction of the Committee on Publication, a comprehensive report upon the improvements and discoveries in pharmacy, chemistry, materia medica and collateral branches of knowledge, together with such information as will furnish an epitome of the progress in the sciences and art of pharmacy, and of its votaries, both at home and abroad.

All journals and publications received in exchange for the publications of the Association, and such other journals and publications as may be deemed necessary for the proper preparation of the report, shall be sent to the Reporter on the Progress of Pharmacy, and these, after use, shall be promptly forwarded to the Editor of the JOURNAL of the Association for preservation.

He shall cooperate with the Editor of the JOURNAL of the Association in the preparation of subject-matter for that publication.

In case of the illness or inability of the Reporter to carry on the work of the Report, the Committee on Publication shall make the best arrangements possible to continue the work.

Chapter VIII.

THE LOCAL SECRETARY.

Article I—Residency. The Local Secretary shall reside at or near the place where the next annual meeting of the Association is to be held.

Article II—Duties. He shall assist the General Secretary in his duties.

He shall cooperate with the Council and any Local Committee appointed by the Council for making arrangements for the annual meeting, acting as the chairman of such committee.

He shall correspond with the chairmen of the different sections and committees, and with members, in advance of the annual meeting, for the promotion of its objects.

He shall have the custody of specimens, papers, and apparatus intended for use in any exhibition at the annual meeting.

Article III—Exhibition. Should the Council decide to have an exhibition at the annual meeting, this shall be in charge of the Local Secretary and a Local Committee to be elected by the Council.

Chapter IX.

THE COUNCIL.

Article I—Composition. The Council shall consist of nine members elected by the Association, as provided for in Chapter II, Article 1, together with one member elected by each Section of the Association, one member elected by each Branch of the Association, and the President, Vice Presidents, General Secretary, Treasurer, Editor of the JOURNAL of the Association, Reporter on the Progress of Pharmacy, the Secretary of the Council and the Local Secretary, ex-officio.

The elected members of the Council shall be elected to serve for a term of three years.

Any vacancy which may occur in the Council shall be filled for the unexpired term, by election, by either the Association (as provided for in Chapter II, Article 1), or by the Section, or the Branch, at its next annual meeting.

Article II—Duties. All the business of the Association which is not of a scientific character or transacted at the general session shall be in charge of the Council, which is empowered to transact business for the Association during and between the times of meetings.

The Council shall have charge of all properties and of the financial affairs of the Association, and shall have the exclusive right to appropriate money from the Treasury and reduce any appropriation when necessary.

It shall elect the members of the Association and have charge of the revision of the roll of members, and shall act as the Committee on Nominations.

It shall report to the general sessions of the Association only new resolutions adopted, appropriations of money and amendments to the Constitution and By-Laws, but the Association in general session assembled shall have the right to call for a report upon any action of the Council and revise the same.

It may accept or reject the credentials of delegates.

It shall have control of the editing, publication and distribution of the publications of the Association.

It shall determine the place for holding the next annual meeting of the Association, selecting, annually, by ballot, one of the three places recommended by the Executive Committee.

It shall determine, also, the time for holding the annual meeting.

It shall have control of all arrangements for the annual meeting and shall decide when an exhibition shall be held.

Article III—Members of Association at Council Meetings. Any member of the Association may attend the meetings of the Council, and may, by vote of the Council, be permitted to speak upon any subject under discussion.

Article IV—Officers. The officers of the Council shall consist of a Chairman, Vice Chairman and a Secretary, to be elected annually by ballot, by the Council.

Article V—Committees. The Council shall annually select the following standing committees: (1) An Executive Committee; (2) a Committee on Finance; (3) a Committee on Publication; (4) a Committee on Invested and Trust Funds, and (5) an Auditing Committee.

The Council shall select, from time to time, such special committees as may be necessary for the proper prosecution of its work.

The committees shall report annually to the Council, or at such other times as the Council may direct.

Article VI—Publications. The Council shall issue, and furnish to subscribers, a monthly journal to be called the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, which shall contain such matters as may be deemed desirable by the Committee on Publication.

The subscription price for the JOURNAL of the Association shall be three dollars per annum to members and non-members alike. *Subscriptions by members to the* JOURNAL *must be separate and distinct from the annual dues, although both may be paid at the same time,* as provided for in Chapter I, Article VI.

The subscription price for the JOURNAL of the Association to *life members* shall be three dollars, but if paid in advance a reduction of one dollar shall be allowed. Life members elected prior to the adoption of these by laws shall receive the JOURNAL of the Association without charge.

The Council shall issue, and furnish to each member, not in arrears for dues, a Report on the Progress of Pharmacy published in such form as may be approved by the Council. The publication shall contain, in addition to the Report on the Progress of Pharmacy, a list of the officers and committees, prefatory matter, Constitution and By-Laws, rules, roll of members, list of members, and such other matter as may be deemed desirable by the Committee on Publication.

If the Report on the Progress of Pharmacy be issued in the form of a volume, the Council shall fix the price for which copies may be sold.

Chapter X.

MEETINGS AND SECTIONS.

Article I—Annual and Special Meetings. The general meetings of the Association shall be held annually at a time and place to be fixed by the Council and communicated to the members through the JOURNAL of the Association at least three months prior to the date of meeting. The Council shall determine, also, the number, order and conduct of all the sessions. Special meetings of the Association may be called by the affirmative vote of three-fourths of the membership of the Council.

Article II—General Sessions. The general sessions of the annual meeting shall be devoted to the general business of the Association and such reports of

the Council as the latter may present, or which may be called for by the Association. At all sessions of the Association, nineteen members shall constitute a quorum.

Article III—Sections. In order to systematize and make more efficient the work of the Association, Sections shall be formed, as follows: (1) Section on Commercial Interests; (2) Scientific Section; (3) Section on Education and Legislation; (4) Section on Practical Pharmacy and Dispensing; (5) Historical Section.

Article IV—Sessions of Sections. The sessions of each Section shall be held annually at such time and in such order as shall be determined by the Council. The conduct of the work of each Section shall be under rules issued by the Council and its work only shall be considered at the session or sessions assigned it. Any Section shall have the right to adjourn a session to such time as does not conflict with the general sessions of the Association or the initial session of another Section.

Article V—Duties of Sections. Each Section, through its officers, shall solicit papers and propose suitable subjects for discussion at the annual meeting, arrange the business of the Section in advance, and attend to such duties as may be referred to it. It shall make reports to the Council, if desired.

The special duties of each Section shall be as follows:

(1) *The Section on Commercial Interests* shall consider the commercial problems of pharmacy and the best methods of regulating them.

(2) *The Scientific Section* shall study questions of scientific interest affecting the growth and development of pharmacy and allied sciences.

(3) *The Section on Education and Legislation* shall investigate and keep a record of, and compile for reference, the enactments of the states and nation regulating the practice of pharmacy and the sale of drugs, and shall report, from time to time, on the progress of pharmaceutical education and legislation.

(4) *The Section on Practical Pharmacy and Dispensing* shall solicit papers pertaining to the actual practice of pharmacy in retail stores.

(5) *The Historical Section* shall present matters of especial historical interest in pharmacy, and shall secure the collection of letters, papers, etc., written by members of the Association, which, when so collected, shall remain in the custody of the Historian and be available for reference.

Article VI—Officers of Sections. Each Section shall annually elect, by ballot, a Chairman, Vice Chairman and Secretary, and, every *three* years, a member of the Council.

The officers of the Section on Practical Pharmacy and Dispensing shall be composed of members actually engaged in the retail drug business.

The member of the Council representing the Historical Section shall act as the Historian, also.

Article VII—Duties of Section Officers. The Chairman of each Section shall preside at the annual meeting of his Section, appoint all committees and fill vacancies in same; and present an annual address upon such subjects as he may deem of importance to the Section. In the absence of the Chairman, the Vice Chairman shall preside, or, in his absence, the Section shall elect a temporary Chairman.

The Secretary of each Section shall present at each meeting a brief report of the conditions within the Section, shall keep the minutes of each session, and secure all the documents and papers submitted and place these in the hands of the General Secretary as promptly as possible; he shall, also, transmit to the General Secretary the names of officers and committees elected or appointed.

Article VIII—Papers. Any person desiring to submit a paper to the Association, shall present the same to the Chairman of the particular Section to which it refers. Not more than ten minutes shall be allowed for the presentation of any paper, unless by unanimous consent of the Section. All papers presented to the Association and its Branches shall become the property of the Association, with the understanding that they are not to be published in other publications than those of the Association, except by the consent of the Committee on Publication.

Article IX—Order of Business for the First General Session of the Association. The order of business of the *first* general session of the annual meeting of the Association shall be as follows:

1. Meeting called to order by the President of the Association, or ranking official, and the appointment of a General Secretary pro tempore, if necessary. Nineteen members shall constitute a quorum.
2. Reading of the President's Address, and the appointment of a Committee on President's Address.
3. Reading of the List of Accredited Delegates by the General Secretary.
4. Reading of the names of committees, and the general sessions or Sections to which they shall report.
5. Reading of the minutes of the Council relating to new resolutions adopted, appropriations of money and amendments to the Constitution and By-Laws.
6. Incidental business.
7. Adjournment until next session.

Article X—Order of Business for the Second General Session of the Association. The order of business for the *second* general session of the Association shall be as follows:

1. Meeting called to order by the President of the Association, or ranking official.
2. Reading of the minutes of the preceding session.
3. Reading of reports from the Council.
4. Report of the General Secretary.
5. Report of the Treasurer.
6. Reports of Standing Committees.
7. Reports of Special Committees.
8. Unfinished business.
9. New business.
10. Adjournment until next session.

Article XI—Order of Business of the Subsequent General Sessions of the Association. The order of business for the *subsequent* general sessions of the Association shall be as follows:

1. Call to order by the President of the Association, or ranking official.
2. Reading of the minutes of the preceding sessions.

3. Reading of reports from the Council.
4. Reports of Officers.
5. Reports of Standing Committees.
6. Reports of Special Committees.
7. Unfinished business.
8. New business.
9. Adjournment until next session, and adjournment *sine die* at final session.

Article XII—Order of Business for the Sessions of the Sections. The order of business for the sessions of the Sections shall be determined by each Section for itself, subject to the rules of the Council.

Article XIII—Installation of Officers. At the final general session of the Association, and of the Sections, the newly elected officers of the Association and the Sections shall take their respective places.

Article XIV—Social Sessions. The Council may arrange for such social sessions, to be held after the second general session, as it may deem expedient, but no business of the Association shall be transacted at these social sessions.

Chapter XI.

COMMITTEES.

Article I—Standing Committees of the Association. The standing committees of the Association shall be as follows:

1. Committee on National Formulary.
2. Committee on U. S. Pharmacopoeia.
3. Committee on Standards for Unofficial Drugs.
4. Pharmaceutical Syllabus.
5. Committee on Legislation.
6. Committee on Membership.
7. Committee on Transportation.
8. Committee on Nominations.
9. Board of Canvassers.
10. Committee on Prizes and Fellowships.
11. Committee on Obituaries and Memorials.

Article II—Committee on National Formulary. The Committee on National Formulary shall be appointed by the President of the Association and shall consist of fifteen members. The Committee shall be a continuous committee to serve from one revision of the National Formulary until the next is completed, and any vacancy therein shall be filled by the appointing power. The Chairman of the Committee shall be elected by the Council.

Whenever deemed advisable by the Council the Committee on National Formulary shall revise, for publication, the subject matter of the National Formulary, eliminating, correcting and adding, in the light of advanced knowledge, and prosecuting the necessary original research work; and shall submit the manuscript, when completed, to the Council.

The Committee on National Formulary shall report annually to the Council and at such other times as the Council may direct.

Article III—Committee on U. S. Pharmacopoeia. The Committee on United States Pharmacopœia shall be appointed by the President of the Association and

shall consist of ten members. The Committee shall be a continuous committee to serve from one revision of the U. S. Pharmacopœia until the next is completed and any vacancy therein shall be filled by the appointing power. The Chairman of the Committee shall be elected by the Council.

The Committee on U. S. Pharmacopœia shall collect statistics upon the use of official and non-official drugs and shall ascertain the general wishes and requirements of the profession throughout the country regarding changes and improvements in the U. S. Pharmacopœia. It shall critically examine the official formulas, and methods of testing. It shall study the formulas and methods of other pharmacopœias, as well as those sugested in pharmaceutical literature generally. It shall devise new and original improvements, and in every way seek to perfect the U. S. Pharmacopœia and to cooperate with the Committee of Revision of the U. S. Pharmacopœia.

The Committee on U. S. Pharmacopœia shall report annually to the Council, and at such other times as the Council may direct.

Article IV—Committee on Standards for Unofficial Drugs. The Committee on Standards for Unofficial Drugs shall be appointed by the President of the Association and shall consist of sixteen members, four to be appointed each year for terms of four years each. The Chairman of the Committee shall be elected by the Council.

The Committee on Standards for Unofficial Drugs shall investigate those drugs, pharmaceutical preparations, chemical products and other commodities that enter into the commerce of drugs which are not recognized by the U. S. Pharmacopoeia and shall frame standards for such articles, defining their identity, purity and strength.

The Committee on Standards for Unofficial Drugs shall report annually to the Council and at such other times as the Council may direct.

Article V—Committee on Pharmaceutical Syllabus. The Committee on Pharmaceutical Syllabus shall be appointed by the President of the Association and shall consist of seven members, one to be appointed each year for a seven-year term.

The Committee on Pharmaceutical Syllabus shall report annually to the Association through the Section on Education and Legislation, shall be members of the National Committee on Pharmaceutical Syllabus and shall recommend to the Association the payment of a proportionate share of the current expenses of the National Committee.

Article VI—Committee on Legislation. The Committee on Legislation shall be appointed by the President of the Association and shall consist of five members.

The Committee on Legislation shall study the subject of pharmaceutical legislation, scrutinize all bills affecting pharmacy proposed in the U. S. Congress and states, territories and dependencies, and encourage or discourage the passage of the same as the interests of pharmacists demand. It shall cooperate with allied organizations working toward the same end.

Article VII—Committee on Membership. The Committee on Membership shall be appointed by the President of the Association, and shall represent every state or section covered by the membership of the American Pharmaceutical As-

sociation. The Secretary of the Council shall act as the Secretary of the Committee on Membership.

The function of the Committee on Membership shall be to promote an increase in the membership and extend the field of usefulness of the Association. The Committee, through its Chairman, shall keep a correct list of the members of the Association, and through its Secretary, shall present to the Council the names of all applicants for membership who have complied with the entrance requirements.

Article VIII—Committee on Transportation. The Committee on Transportation shall be appointed by the President of the Association and shall consist of one member from the cities of Boston, New York, Cleveland, Chicago, St. Louis, New Orleans, Atlanta, St. Paul or Minneapolis, Denver and San Francisco, and the General Secretary, Local Secretary, and Secretary of the Council.

The Committee on Transportation shall arrange for the transportation of members from the different sections of the United States and Canada to the place of annual meeting and return. When possible, it shall obtain railroad rates and publish the same in the JOURNAL of the Association sufficiently early to enable members who desire to attend the annual meeting to obtain the necessary information.

Article IX—Committee on Nominations. The Committee on Nominations shall consist of the members of the Council.

The Committee on Nominations shall report the names of *three* nominees for *each* of the offices of President, First Vice President, Second Vice President and Third Vice President, and for *each* of the three Council memberships, to the General Secretary, within two months after the adjournment of the annual meeting.

Article X—Board of Canvassers. The Board of Canvassers shall be appointed by the President of the Association and shall consist of three members.

The duty of the Board of Canvassers shall be to receive from the General Secretary the ballots cast by the membership and determine the results of the annual election. Only the votes of those members whose dues have been paid for the current year shall be counted. Officers and members of the Council shall be elected by a plurality of the votes cast. The Board of Canvassers shall promptly certify to the General Secretary the results of the election.

Article XI—Committee on Prizes and Fellowships. The Committee on Prizes and Fellowships shall be appointed by the President and shall consist of five members.

The Committee on Prizes and Fellowships shall determine the awards to be made on behalf of the Ebert Prize, and such other prizes as may be established.

Essays to be submitted for prizes shall be presented at the annual meeting, to the appropriate Section, referred to the Committee on Prizes and Fellowship, and examined, to ascertain which, if any of them meet the requirements of the founders. In all respects the Committee shall be governed by the stipulations of the donors.

Fellowships may be established and awarded under conditions approved by the Association.

Article XII—Committee on Obituaries and Memorials. The Committee on

Obituaries and Memorials shall be appointed by the President of the Association and shall consist of three members.

The Committee on Obituaries and Memorials shall prepare or have prepared appropriate biographical sketches of the members of the Association for publication in the JOURNAL of the Association, reporting, also, matters of special interest to the Section on Historical Pharmacy at the annual meeting.

Article XIII—Vacancies. Vacancies on any of the committees appointed by the President of the Association shall be filled by him for the unexpired terms.

Chapter XII.

RULES OF ORDER AND DEBATE.

Article I—Enforcement of Rules. The customary rules governing parliamentary bodies shall be enforced by the presiding officer, from whose decision, however, appeals may be taken, if required by two members, and the meeting shall thereupon decide without debate.

Article II—Discussion of Questions. When a question is regularly before the assembly and under discussion, no motion shall be received but (1) to adjourn, (2) to lay on the table, (3) for the previous question, (4) to postpone to a certain day, (5) to commit or amend, (6) to postpone indefinitely, which several motions have precedence in the order named. A motion to adjourn shall be decided without debate.

Article III—Speaking on Questions. No member shall speak more than once on the same subject except by permission, and after every member wishing to speak has spoken.

Article IV—Yea and Nay Vote. On the call of any member the yeas and nays shall be ordered when every member shall vote, unless excused by a majority of those present, and the names and manner of voting shall be entered on the minutes.

Article V—Points of Order. On all points of order not covered in these by-laws, the Association shall follow the established usages of assemblies governed by parliamentary rules.

Chapter XIII.

BRANCHES.

Article I—Formation. Branches of this Association may be formed wherever it may appear that not less than fifteen members of this Association, in good standing, will participate, provided that no more than one such branch shall be formed in any one state, province, district or territory, unless the additional branches shall be formed at a point distant one hundred miles or more from any branch already established in the same state, province, district or territory.

Article II—Members. All active or voting members of Branches must be members of the American Pharmaceutical Association in good standing.

Article III—Objects. The objects and aims of the Branches of this Association shall be the same as set forth in the Constitution of this body, and the acts of Branches shall in no way commit or bind this Association, and can only serve

as recommendations to it. And no Branch shall enact any article of Constitution or By-Laws in conflict with the Constitution or By-Laws of this Association.

Article IV—Member of Council. Each Branch having twenty-five or more active or voting members shall be entitled to elect a representative to the Council of this Association every three years, who shall become and continue to be a member of the Council for that time.

Chapter XIV.

AMENDMENTS AND SUSPENSIONS OF BY-LAWS.

Article I—Amendments. Every proposition to alter or amend these By-Laws shall be submitted in writing at a general session, and may be ballotted for at any subsequent general session, when, upon receiving the affirmative votes of three-fourths of the members present, it shall become a part of the by-laws, except that the Council may make, by unanimous vote, such changes and such changes only, as may be required to adapt them to the rules and regulations of the United States postal authorities.

Article II—Suspensions. A by-law may be suspended by the unanimous consent of the members of the Association present at any session, such suspension applying only to the particular suspension.

BY-LAWS OF THE COUNCIL.

Chapter I.

OFFICERS.

Article I—Election. The officers of the Council shall consist of a Chairman, Vice Chairman and a Secretary, who shall be elected annually, by ballot, by the Council.

Chapter II.

THE CHAIRMAN AND VICE CHAIRMAN.

Article I—Duties. The Chairman shall preside at all meetings of the Council; in his absence or inability to serve, the Vice Chairman, or, in the absence of both, a Chairman pro tempore, shall perform the duties of Chairman.

The Chairman of the Council shall confer with the Chairman of the various standing and special committees of the Association during its sessions, in order to arrange and expedite the business of the Association.

Chapter III.

THE SECRETARY.

Article I—Salary. The Secretary shall receive an annual salary to be fixed by the Council, and also, the amount of his expenses incident to the annual meeting.

Article II—Duties. The Secretary shall keep the minutes of the proceedings of the meetings, and carefully preserve all reports and papers of every description received by the Council.

He shall read all the papers handed him by the Chairman for that purpose, and shall call and record the yeas and nays whenever they are required to be called.

He shall notify the Chairman and members of every Council committee in writing, of their appointments, stating the business upon which the committee is to act.

He shall give notice of the time and place of each meeting of the Council.

He shall act as the Secretary of the Committee on Membership and the Executive Committee.

Chapter IV.

COMMITTEES.

Article I—Standing Committees of the Council. The standing committees of the Council shall be as follows:

1. Executive Committee.
2. Committee on Finance.
3. Committee on Publication.
4. Committee on Invested and Trust Funds.
5. Auditing Committee.

Article II—Executive Committee. The Executive Committee shall consist of four members of the Council holding no office, to be elected annually by the Council, and the President, General Secretary, Treasurer, Chairman of the Council and Secretary of the Council. The Chairman of the Council shall be the Chairman of the committee and the Secretary of the Council its Secretary.

The Executive Committee shall be the executive body of the Council and shall have the power to act for the Council in all matters referred to it by the Council. It shall report all actions to the Council. If deemed necessary, it may hold special meetings, at a convenient place, between the times of annual meetings.

The Executive Committee shall report to the Council the names of three places at which, in their judgment, it will be desirable for the Association to hold the next annual meeting, and the Council shall determine the time and place of such meeting.

Article III—Committee on Finance. The Committee on Finance shall consist of the General Secretary, the Treasurer and the Secretary of the Council. The General Secretary shall be the Chairman of the Committee.

The Committee on Finance shall audit all bills of the Association and pass on orders on the Treasurer for the payment of bills. It shall submit to the Council in December, of each year, a budget of appropriations for the ensuing fiscal year.

Article IV—Committee on Publication. The Committee on Publication shall consist of the President of the Association, the Treasurer, the Editor of the JOURNAL of the Association, and the Chairman and Secretary of the Council. The Committee shall elect the Chairman.

The Committee on Publication shall direct the editing, publication and distribution of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, the Report on the Progress of Pharmacy, and such other publications as may be published by the Association, and shall frame rules, approved by the Council, for the proper conduct of the work.

The Committee on Publication shall have full discretionary power to omit from the JOURNAL of the Association any paper, in part or in whole, that may be presented to it.

Article V—Committee on Invested and Trust Funds. The Committee on Invested and Trust Funds shall be appointed by the Chairman of the Council, and shall consist of three members of the Association, with the General Secretary and Treasurer ex-officio.

For the first year one member shall be appointed for a term of one year, and one for a term of two years and one for a term of three years, and thereafter in the expiration of the term of any such appointee a member shall be appointed for the full term of three years.

The Committee on Invested and Trust Funds shall carefully study the nature and status of all invested, savings and trust funds of the Association, and make a written report to the Council, which shall be published in full in the JOURNAL of the Association. The committee shall not have the power to invest or reinvest any of such funds except as instructed by the Council.

The Committee on Invested and Trust Funds shall receive applications, in writing, from members for grants from the interest derived from the *Centennial Fund*, the applications to be accompanied by a statement of the investigation to be made, and of the amount and cost of material required, it being understood that the results of the investigation shall be published, if desired by the Council.

The Committee on Invested and Trust Funds shall consider these applications, and, at as early a date as possible, shall report to the Council an outline of the proposed investigations, together with such recommendations of grants from the available funds as it may deem proper.

The Council shall decide upon these recommendations, and in case the grants be approved, the Chairman of the Council shall direct orders to be drawn upon the Treasurer in favor of those members to whom grants have been made.

Article VI—Auditing Committee. The Auditing Committee shall be appointed by the Chairman of the Council, and shall consist of three members of the Association residing in or near the same city or town as that in which the Treasurer resides.

The Auditing Committee shall meet in January of each year and carefully examine all the books, accounts, vouchers, savings bank books, etc., of the Treasurer, return the same to him within two weeks after the date of their reception, and report thereon, in writing, to the Council, prior to the first day of February following. Or, by consent of Council, the committee may employ professional auditors.

Chapter IX.

COUNCIL SESSIONS.

Article I—Council Sessions. The Council shall meet annually previous to the assembling of the Association, and at such other times as it may determine, or at the call of the Chairman of the Council. Nine members of the Council shall constitute a quorum.

Article II—Special Sessions. On the written application of three members to the Chairman of the Council, a special session shall be called.

Article III—Order of Business of Council at First Session. The order of business of the *first* session of the Council shall be as follows:

1. Reading of the minutes of the previous meeting.
2. Unfinished and deferred business and business referred to the Council by the Association.
3. Election of members.
4. Reading of reports and appointment of special committees.
5. Nomination of officers for ensuing year.
6. New business.
7. Adjournment until next session.

Article IV—Order of Business of Council at Subsequent Sessions. The order of business at *subsequent* sessions (except the final) shall be:

1. Reading of the minutes of the previous meeting.
2. Unfinished and deferred business and business referred to the Council by the Association.
3. Election of members.
4. Reports of Standing Committees.
5. Reports of Special Committee.
6. New business.
7. Adjournment until next session.

The order of business at the *final* session of the Council shall be the same as above, except (1) the Council shall be organized for the new year; (2) the officers for the ensuing year shall be elected and installed; (3) the standing committees of the ensuing year shall be appointed, and, (4) the minutes of the previous session shall be read and approved, after which, (5) adjournment shall be had.

Chapter X.

RULES OF ORDER.

Article I—Voting. In all questions arising before the Council or its committees, and which can be disposed of by a positive or negative vote, the Chairman of the Council, or the Chairman of the Committee, may take the vote of their respective bodies in writing, and the same shall have the same force and effect as if the members had been personally present, a majority of the votes cast being considered sufficient to decide a question. The ayes and nays of such votes taken by the Council shall be entered upon the minutes.

Chapter XI.

AMENDMENTS AND SUSPENSIONS OF BY-LAWS.

Article I—Amendments. Every proposition to alter or amend these by-laws shall be submitted in writing at one session and may be balloted for at the next session of the Council, when upon receiving the affirmative vote of three-fourths of the members present, it shall become a part of these by-laws.

Article II—Suspensions. A by-law may be suspended by the unanimous consent of the members present at any session of the Council, such suspension applying only to the particular suspension.

J. W. ENGLAND, Chairman.

PRELIMINARY REPORT OF COMMITTEE ON TRANSPORTATION.

The Committee on Transportation reports the following routes and rates from the respective points named to the Nashville meeting, August 18-23. In certain cases, other routes may be more convenient for individual members.

The rates generally are summer tourist rates, which usually amount to about 2 cents a mile each way, or 1 and ⅓ fares for the round trip. This is preferred to the vexatious "certificate plan" with its red tape and bothersome details.

From New Orleans to Nashville.
Via Q. & C. and N. C. & St. L.

Leave New Orleans, 7:00 p. m.
Arrive Chattanooga, 10:05 a. m.
Leave Chattanooga, 12:05 noon.
Arrive Nashville, 4:30 p. m.

Round trip fare from New Orleans, $24.10; from Shreveport, $23.40; from Monroe, $19.35.

Sleeping car berth from New Orleans to Chattanooga, $3.00 for upper; $2.50 for lower. Parlor car from Chattanooga to Nashville, 75 cents.

From Cincinnati to Nashville.
Via Louisville & Nashville.

Leave Cincinnati, 11:15 a. m., 6:00 p. m., 10:30 p. m.
Arrive Nashville, 8:35 p. m., 2:10 a. m., 8:05 a. m.

Single rate, $8:30; party rate, 10 or more, $6.05.

From Pittsburgh to Cincinnati.
Via Baltimore & Ohio, Southwestern.

Lv. Pittsburgh, 8:35 p. m., 7:45 a. m.
Lv. Wheeling, 12:00 noon, 11:00 a. m.
Lv. Bellaire, 11:25 p. m., 10:25 a. m.
Lv. Zanesville, 1:58 a. m., 12:48 p. m.
Lv. Newark, 3:00 a. m., 1:45 p. m.
Ar. Columbus, 3:55 a. m., 2:35 p. m.
Lv. Columbus, 4:00 a. m., 2:40 p. m., 7:15 a. m., 5:00 p. m.
Lv. Wilmington, 5:44 a. m., 4:06 p. m.
Lv. Midland City, 5:58 a. m., 4:20 p. m., 9:19 a. m., 7:11 p. m.
Ar. Cincinnati, 7:45 a. m., 5:50 p. m., 11:00 a. m., 8:55 p. m.

From New York and Eastern Points to Cincinnati.
Via Big Four Route.

Lv. New York, 2:00 p. m.
Lv. Albany, 5:53 p. m.
Lv. Syracuse, 10:06 p. m.
Lv. Cleveland, 3:50 a. m.
Ar. Columbus, 7:15 a. m.
Ar. Springfield, 8:22 a. m.
Ar. Dayton, 9:05 a. m.
Ar. Cincinnati, 10:50 a. m.

Lv. New York, 4:00 p. m., 5:30 p. m.
Lv. Boston, 10:30 a. m., 2:00 p. m.
Lv. Albany, 7:00 p. m., 9:00 p. m.
Lv. Syracuse, 10:06 p. m., 7:15 a. m.
Lv. Cleveland, 3:50 a. m., 7:40 a. m.
Ar. Columbus, 7:15 a. m., 10:40 a. m.
Ar. Springfield, 8:22 a. m., 11:44 a. m.
Ar. Dayton, 9:05 a. m., 12:28 p. m.
Ar. Cincinnati, 10:50 a. m., 1:55 p. m.

Lv. Buffalo, 7:30 p. m.
Lv. Cleveland, 12:05 a. m., 12:30 p. m.
Lv. Columbus, 3:40 a. m., 4:00 p. m.
Ar. Springfield, 4:40 a. m., 5:14 p. m.
Ar. Dayton, 5:20 a. m., 5:35 p. m.
Ar. Cincinnati, 7:15 a. m., 7:30 p. m.

Stop-over at Glasgow Junction, either way, for visit to Mammoth Cave. Round trip fare from Glasgow Junction to Cave, $2.00; meals and lodging at Cave, 50 cents each. Cave fees, including guide, $1.00 for short and $2.00 for long route.

From Detroit to Cincinnati.
Via C., H. & D. Ry.

Lv. Detroit, 8:20 a. m., 12:05 p. m., 10:45 p. m.
Ar. Toledo, 10:00 a. m., 1:55 p. m., 12:25 a. m.
Lv. Toledo, 10:10 a. m., 2:00 p. m., 12:40 a. m.
Lv. Lima, 12:15 p. m., 3:53 p. m., 3:00 a. m.
Ar. Dayton, 2:20 p. m., 5:55 p. m., 5:10 a. m.
Lv. Dayton, 2:25 p. m., 6:00 p. m., 5:25 a. m.
Ar. Hamilton, 3:25 p. m., 6.49 p. m., 6:20 a. m.
Ar. Cincinnati,, 4:20 p. m., 7:40 p. m., 7:20 a. m.

From Mackinaw City to Cincinnati.
Via Pennsylvania Lines.

Lv. Mackinaw City, 10:10 p. m., 12:01 p. m.
Lv. Petoskey, 11:40 p. m., 1:25 p. m.
Lv. Grand Rapids, 7:02 a. m., 8:50 p. m.
Ar. Ft. Wayne, 12:01 p. m., 1:05 a. m.
Ar. Richmond, 3:40 p. m., 4:25 a. m.
Ar. Cincinnati, 5:55 p. m., 6:55 a. m.

From Detroit to Cincinnati.
Via Big Four Route.

Lv. Detroit, 8:27 a. m., 12:00 noon, 10:35 p. m.
Lv. Toledo, 10:30 a. m., 1:48 p. m., 12:30 a. m.
Lv. Fostoria, 11:20 a. m., 2:42 p. m., 1:26 a. m.
Lv. Springfield, 2:10 p. m., 5:25 p. m., 4:55 a. m.
Lv. Dayton, 2:59 p. m., 6:02 p. m., 5:32 a. m.
Ar. Cincinnati, 4:45 p. m., 7:40 p. m., 7:25 a. m.

From Cleveland to Cincinnati.
Via Pennsylvania Lines.

Lv. Cleveland, 9:00 p. m.
Lv. Akron, 10:15 p. m.
Ar. Columbus, 1:50 a. m.
Lv. Columbus, 2:36 a. m.
Ar. Cincinnati, 6:30 a. m.

Lv. Cleveland, 9:00 a. m.
Ar. Columbus, 1:45 p. m.
Lv. Columbus, 2:00 p. m.

Lv. Youngstown, 7:00 a. m.
Lv. Alliance, 8:05 a. m.
Lv. Orrville, 9:20 a. m.
Ar. Columbus, 12:15 p. m.
Ar. Cincinnati, 5:25 p. m.

From New York and Eastern Points to Cincinnati.

Via Baltimore & Ohio, Southwestern.

Lv. New York, 23d St., 9:50 a. m., 6:50 p. m. 6:50 p. m.
Lv. New York, Liberty St., 10:00 a. m., 7:00 p. m.
Lv. Newark, 9:55 a. m., 6:16 p. m.
Lv. Philadelphia, 24th and Ches., 12:30 p. m., 9:21 p. m.
Lv. Wilmington, 1:06 p. m., 9:54 p. m.
Lv. Baltimore, Mt. Royal Sta., 2:43 p. m., 11:23 p. m.
Lv. Baltimore, Camden Sta., 3:00 p. m., 11:32 p. m.
Lv. Washington, 4:10 p. m., 12:40 a. m.
Lv. Cumberland, 8:28 p. m., 4:45 a. m.
Lv. Oakland, 10:27 p. m., 6:50 a. m.
Lv. Grafton, 12:11 a. m., 8:55 a. m.
Lv. Parkersburg, 2:38 a. m., 11:25 a. m.
Lv. Athens, 3:35 a. m., 12:24 p. m.
Lv. Chillicothe, 5:70 a. m., 2:05 p. m.
Ar. Cincinnati, 8:10 a. m., 5:15 p. m.

From New York and Intermediate Points to Cincinnati.

Via Erie Ry.

Lv. New York, 2:35 p. m., 9:05 p. m.
Lv. Jamestown, 2:16 a. m., 2:30 a. m.
Lv. Meadville, 5:50 a. m., 4:48 a. m.
Lv. Youngstown, 5:59 a. m., 6:28 a. m.
Lv. Ravenna, 7:35 a. m., 7:38 a. m.
Lv. Akron, 9:32 a. m., 8:26 a. m.
Lv. Mansfield, 10:35 a. m., 10:50 a. m.
Lv. Marion, 10:54 a. m., 1:30 a. m.
Ar. Cincinnati, 3:00 p. m., 6:45 a. m.

From Baltimore and Intermediate Points to Nashville.

Via Pennsylvania Lines.

Same train service as for New York and Philadelphia, leaving Baltimore at 4:20 p. m., arriving at Nashville next day at 8:00 p. m.

From New York and Intermediate Points to Nashville.

Via Pennsylvania Lines, Southern Ry., and N. C. & St. L.

Lv. New York, Penna. R. R., 9:30 p. m.
Lv. Philadelphia, Penna. R. R., 12:15 a. m.
Ar. Washington, Penna. R. R., 3:55 a. m.
Lv. Washington, Southern Ry., 4:10 a. m.
Ar. Lynchburg, Southern Ry., 4:10 a. m.
Ar. Chattanooga, Southern Ry., 10:00 p. m.
Ar. Nashville, N. C. & St. L., 2:55 a. m.

The car arrives Nashville at 2:55 a. m., and is parked and may be occupied until 7:00 a. m.

From New York and Intermediate Points to Nashville.

Via Pennsylvania Lines and L. & N. Ry.

Lv. New York (Eastern Time), 2:04 p. m., 8:34 p. m.
Lv. N. Philadelphia, 4:00 p. m., 10:26 p. m.
Lv. Philadelphia, 4:31 p. m., 10:48 p. m.
Lv. Washington, 3:10 p. m., 7:50 p. m.
Lv. Baltimore, 4:20 p. m., 8:55 p. m.
Lv. Harrisburg, 7:25 p. m., 1:20 a. m.
Ar. Pittsburgh (Eastern Time), 2:16 a. m., 7:30 a. m.
Ar. Pittsburgh (Central Time), 1:16 a. m., 6:30 a. m.
Lv. Pittsburgh (Central Time), 1:20 a. m., 8:15 a. m.
Ar. Columbus, 6:25 a. m., 1:45 p. m.
Ar. Cincinnati, 10:50 a. m., 5:25 p. m.
Ar. Louisville, L. & N., 2:45 p. m., 2:20 p. m.
Ar. Nashville, 8:35 p. m., 8:05 a. m.

From Chicago to Nashville.

Via Chicago & Eastern Illinois Ry.

Leave LaSalle St., Chicago, 5:20 p. m., Sunday, August 17.

Arrive Nashville, 7:55 a. m., Monday, August 18.

One way fare, $10.75; party rate, ten or more, $9.30.

Pullman, lower berth, $2.50; upper $2.00.

The party rate from Nashville to Cincinnati is $6.05, available for those who wish to attend the N. A. R. D. Convention on the way home.

From California Points.

Via Southern Pacific.

Summer tourist rates apply generally over the trans-continental lines. The round trip from San Francisco to Memphis is $70.00, and to Chicago $72.00. Sleeper to Memphis, $12.00 each way; to Chicago, $13.00 each way.

The time of the going trip is limited to 15 days from the starting point, and the final return limit is three months from the date of purchase.

Members desiring more detailed information than is given above should consult local railroad officials, or the nearest member of the Transportation Committee.

The members of this Committee are as follows:

W. Bodemann, Hyde Park, Chicago, Ill.
William C. Alpers, City Island, New York.
H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.
Charles G. Merrell, P. O. Box 432, Cincinnati, O.
J. O. Burge, 303 Eighth Ave., S., Nashville, Tenn.
Charles B. Whilden, Suite 909-910 Butler Bldg., San Francisco, Cal.
F. C. Godbold, 3613 Chestnut St., New Orleans, La.
W. S. Elkin, Jr., Peachtree and Marietta Sts., Atlanta, Georgia.
Charles M. Ford, 1236 Ogden St., Denver, Col.
C. Herbert Packard, 7 Central Sq., E., Boston, Mass.
Lewis C. Hopp, 1104 Euclid Ave., Cleveland, O.

Respectfully submitted,
W. BODEMANN, Chairman.

Report on the Progress of Pharmacy

For the Year 1912

(Twelfth Installment.)

A New Method for the Separation of Thorium.—T. O. Smith and C. James have observed that thorium may be separated quantitatively from the rare earths by means of sebacic acid.

Thorium sebacate is a voluminous, granular precipitate which settles readily and is easily filtered.

The thorium solution should be neutral, and hot, and a slight excess of a hot solution of sebacic acid added slowly with continuous stirring. The precipitate which forms at once is immediately filtered and thoroughly washed with boiling water. The sebacate washes readily and the operation may be performed with ease in a very short time. The precipitate is rapidly dried, ignited, and weighed as thorium dioxide.

The results given show close agreement with that obtained by the use of oxalic acid, and the presence of cerium, lanthanum, praseodymum, neodymium, and traces of samarium, gadolinium, etc., did not seem to effect the accuracy of the separation.

Sebacic acid may be prepared by heating castor oil soap with sodium hydroxide, and is very sparingly soluble in cold water, but fairly soluble in boiling water.—Jour. Am. Chem. Soc., March, 1912, Vol. 34, p. 281. (L. A. B.)

The Standardization of Potassium Permanganate Solution by Sodium Oxalate.—R. S. McBride of the Bureau of Standards has undertaken a study of the best methods and material for the standardization of Potassium Permanganate Solution.

It was found that Sodium Oxalate was probably best suited as a standardizing material, owing to its cheapness, ease of determining its purity, stability under ordinary conditions, and the convenience, precision, and accuracy with which it may be used.

As the result of large numbers of experiments, and the study of the possible errors entering into the reaction, McBride recommends the following method of procedure:

In a 400 cc. beaker, dissolve 0.25-0.3 gm. of sodium oxalate in 200 to 250 cc. of hot water (80-90° C.), and add 10 cc. (1:1) Sulphuric acid. Titrate at once, with 1/10 N $KMNO_4$ solution, *stirring the liquid vigorously and continuously.* The permanganate must not be added more rapidly than 10-15 cc. per minute, and the last ½-1 cc. must be added dropwise with particular care to allow each drop to be fully decolorized before the next is introduced. The excess of $KMNO_4$ used to cause an end point must be estimated by matching the color in another beaker containing the same amount of acid and hot water.

The solution must not be below 60° C. by the time the end point is reached, if necessary use heat to maintain temperature.—Journ. Am. Chem. Soc., April, 1912, Vol. 34, p. 393. (L. A. B.)

The Conversion of Cinchonine and Quinine into their poisonous isomers, Cinchotoxine and Quinotoxine, and the relation of this Conversion to the Toxicity of the Cinchona Alkaloids.—H. C. Biddle of the University of California points out that the abnormal action of quinine or cinchonine as occasionally observed and usually ascribed to some idiosyncrasy of the patient, may be due to the formation in the system of small quantities of cinchotoxine and quinotoxine, and has made a study of the conditions under which cinchonine and quinine are converted into their poisonous isomers.

He finds that when salts of cinchonine or quinine are heated with water, with or without excess of acid, at 98-102° C. they give rise to varying quantities of their poisonous isomers, cinchotoxine or quinotoxine.

The velocity of the rearrangement rises as the dissociation constant of the acid falls, the change being practically quantitative with

such acids as acetic, lactic, citric, tartaric, malic, etc., while on the other hand with such acids as hydrochloric, being hardly detectable, even after 48 hours heating.

The same changes take place at 36° C., the only difference from that observed at 98-102° C. being the diminished rate of conversion, about 2% conversion being observed with the organic acids at this temperature. Sunlight has the property of producing similar changes at ordinary temperature, in solutions of cinchonine or quinine.—Jour. Am. Chem. Soc., April, 1912, Vol. 34, p. 500. (L. A. B.)

A System of Qualitative Analysis for the Common Elements.—This article forms a continuation of a series of articles under the same main title, by A. A. Noyes, published in the Journal American Chemical Society, this particular paper being "Part V—Detection of the Acidic Constituents."

Owing to the nature of the subject matter, the paper is not abstractable.—Journ. Am. Chem. Soc., May, 1912, Vol. 34, p. 609. (L. A. B.)

Cobaltinitrites: A Study of and their Application to Analytical Chemistry.—L. L. Burgess and Oliver Kann, University of Illinois, state that the precipitation of potassium as the cobaltinitrite is rendered much more delicate by the presence of silver nitrate, the silver replacing the sodium in the sodium-potassium derivative, forming a much less soluble compound.

One drop of a 25% solution of pure sodium cobaltinitrite (Na_3 Co) $(NO_2)6$ produces no precipitate in a solution containing less than 100 parts K per million, while in the presence of 1/10 $AgNO_3$ a distinct precipitate is produced in a dilution of 1 part K per million.

Ammonia, Cesium, Rubidium, and Thallium combine with Silver to form less soluble salts than the simple salts.

Lead and mercurous mercury also have the property of decreasing the solubility of the alkali cobaltinitrites.—J. Am. Chem. Soc., May, 1912, Vol. 34, p. 652. (L. A. B.)

China Wood Oil: The Refractive Index of.—Louis E. Wise points out that China Wood Oil possesses a refractive index higher than that of any other drying oil and submits a table showing the refractive index of a number of *commercial* wood oils. The author states that owing to the primitive conditions in the collection and the shipment of the oil to the coast from the country districts of China, he was unable to get authentic samples.

The index of refraction at 25° C. of the oil ranges from 1.5099 to 1.5186, while that of linseed oil is 1.4810, soya bean oil is 1.4751 and tallow oil is 1.4833: thus gross adulteration of china wood oil can be very readily shown by the use of the refractometer.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 498. (L. A. B.)

Beeswax: The Refractive Index of.—L. Feldstem, in commenting upon the temperature at which the refractive index of beeswax is best taken, advocates the use of 75° C. as the best, as the wax is thoroughly melted at that temperature, and a clear reading obtained.

He also advocates reporting the refractive index at 75° C. instead of at 40° C., as it is unreasonable to report the refractive index at a temperature at which it is an opaque solid, when the actual reading is made on the melted wax.

Feldstem submits a table showing the refractive index of a number of samples of beeswax of known purity, at the temperature of 65° C., 75° C. and 85° C., also a table showing the influence a number of adulterants have on the refractive index of beeswax.

The refractive index of pure beeswax ranges from 1.4398-1.4451 at 75° C., and a temperature correction of .00037 per degree C., is necessary when the reading is taken at other than 75° C.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 498. (L. A. B.)

China Wood Oil: A Method for Examining.—Parker C. McIlhiney states that when china wood oil is dissolved in 99½% acetic acid, and a solution of iodine in 99½% acetic acid is added to it, there is an immediate separation of some solid product. If a petroleum distillate (b. p. below 80° C.) be now added and mixed thoroughly, decanted and the extraction repeated with a second and third portion of solvent and decanted, and the mixed liquids treated in a separatory funnel with water until free from acetic acid, then extracted with a solution of potassium iodide, until the petroleum solvent is free from free iodine, the petroleum solvent evaporated and the residue weighed, the weight of the residue represents fairly accurately the proportion of foreign oils present

in the sample.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 496. (L. A. B.)

..Unguentum Zinci Oxidi, Manipulation of Process for.—Thomas A. Egan suggests that the oxide of zinc be triturated with oil of benne, about ten percent, until a smooth paste results, then melt the lard and add it to the resulting paste, stirring the mixture until it is cold.—Proc. Penn. Phar. Assoc., 1912, p. 295. (E. C. M.)

Aqua Caryophylli—Milton Dunn, Sheffield, Pa., suggests the following formula for a vehicle combining the following advantages:

1. Appreciable therapeutic value.
2. Wide range as a solvent.
3. Freedom from sugar.
4. Not liable to deterioration.
5. Distinct flavor.
6. Agreeability to most people, not being suggestive of ordinary food or drink.
7. Lack of alcohol or other preservative.
8. Easily and quickly manufactured.

FORMULA.

Oil of cloves.....	4 cc.
Tinct. of cudbear.....	50 cc.
Alcohol	43 cc.
Purified talc.....	15 grams.
Water to make.....	1000 cc.

Triturate the oil with the talc, and with continued trituration add first the tincture, then 900 cc. of water. Filter, return the filtrate until it comes through perfectly clear. Mix this with the alcohol and add sufficient water through the filter to make 1000 cc.—Proc. Penn. Phar. Assoc., 1912, pp. 296-297. (E. C. M.)

Ergot, a New and Reliable Method for the Preservation of Ergot Preparations.—Paul S. Pittinger and Charles E. Vanderkleed in a series of experiments extending over a year, the results of which are given in the accompanying tables, suggests that by the adoption of the Vacuum method of storing ergot preparations their stability may be retained for a considerable length of time.—Proc. Penn. Phar. Assoc., 1912, pp. 128-133. (E. C. M.)

Hydrastis, the Comparative Alkaloidal Strength of Rootlets and Rhizome of.—To determine the comparative alkaloidal strength of the rootlets and rhizome, Charles H. LaWall made a careful test of a lot of Hydrastis Canadensis. The lot weighed ninety-eight pounds and furnished 45.5 pounds of Rhizomes and 48 pounds of Rootlets, the balance being waste. Upon assay the rhizomes assayed 2.48% and the rootlets 1.38%. Hydrastis rhizomes are therefore, according to his analysis, 1.5 to 2 times as rich in hydrastine as the rootlets.—Proc. Penn. Phar. Assoc., 1912, pp. 142-143. (E. C. M.)

Calcii Lactophosphatis, Improved Manipulation of.—Wilbur F. Horn says that the following method of procedure proves more satisfactory than that of the Pharmacopœia: Mix the Lactic and Phosphoric Acids with one hundred cubic centimeters of water in a capacious vessel, add the precipitated Calcium Carbonate in small portions to the mixture, agitating after each addition, until it is entirely dissolved and effervescence has ceased, add 100 cc. of water, filter through a plain filter, rinsing the container and washing the filter with 100 cc. of water: add the orange flower water, then the sugar, agitate until solution is effected, strain through absorbent cotton: add enough water through the cotton to make the measure 1000 cc.—Proc. Penn. Phar. Assoc., 1912, p. 150. (E. C. M.)

Creosote, Determination of, in Tablets.—Charles E. Vanderkleed and Fritz Heidlberg suggest the following as satisfactory methods for the determination of the creosote content of tablets:

FOR PLAIN TABLETS.

An amount of tablets containing forty to fifty grains of creosote is finely powdered and heated with about 50 cc. of water and 10 cc. strong NaOH solution (1:2) for about one hour on a water-bath. In this time the creosote will have dissolved in the alkaline liquid. (For tablets in which the creosote is present in combination with magnesium a longer digestion is necessary and it is more convenient to shake the powdered tablet for several hours with the NaOH solution.)

The liquid is now transferred into an eight-ounce milk centrifuge bottle, cooled, 50 cc. of benzene added and then enough strong HCl is added slowly to render the liquid acid. The bottle is corked and shaken vigorously for ten minutes and then centrifuged. The upper benzene layer is carefully poured off into a separator, and the shaking with benzene is repeated two or three times, until the last benzene layer is nearly colorless. In case the combined benzene solutions do not amount to more than 70 cc. they can be poured directly into the measuring flask. In case they do amount to more, it is necessary to either concentrate them or to work them up in two portions.

The best plan, however, is to concentrate either by distilling off some of the benzene, in which case it is necessary to add some strong NaOH solution in order to avoid loss of creosote, or to shake the separator with successive portions of 20, 10 and 10 cc. of strong NaOH solution (1:3), adding 50 cc. of benzene, preferably the one which contained the creosote before, and neutralizing the combined NaOH solution by slowly adding strong H_2SO_4 (60%), using methyl-orange as indicator. Shake the separator and let separate completely. Draw off the watery solution which is rejected. In the meantime, place about 20 cc. of strong NaOH solution (1:3) in the measuring apparatus described in Bulletin No. 107, Bureau of Animal Industry, P. 16; with the aid of pipette add 1 cc. of benzene, and take the reading of the NaOH solution carefully. Now pour the creosote solution into the measuring apparatus, through a funnel fitted with cotton moistened with benzene. Rinse out the separator with successive small portions of benzene, and shake the measuring bulb vigorously for five minutes. Let stand for about two hours, rotating occasionally to hasten the separation. In case a slight emulsion occurs, heat gently over water-bath to break the same. After the meniscus is perfectly sharp take the reading and calculate the amount of creosote by multiplying the number of cc. of increase in the NaOH solution by the specific gravity (108). In determining guaiacol the same method can be used with the difference that the number of cc. has to be multiplied by the Sp. Gr. of guaiacol.

For Gelatine-coated Tablets it is better to avoid heating on account of the gelatine of the coating. The powdered tablets are merely shaken with about 50 cc. of NaOH T. S. for several hours, then acidity and treated in the same way as the plain tablets.—Proc. Penn. Phar. Assoc., 1912, pp. 301-303. (E. C. M.)

Morphine, Determination of, in Tablets.—L. Henry Bernegau and Fritz Heidlberg say that "The determination of morphine with accuracy, even in plain tablets of morphine sulphate or hydrochloride, is not an easily accomplished assay. Morphine, being an exception to the rule that alkaloids are soluble in the ethereal solvents usually employed in assaying, precludes the use of the ordinary "shaking-out process." They recommend the following process for the estimation of morphia in tablets:

An amount equal to about 0.3 grams morphine sulphate is dissolved in water or in 1% sulphuric acid, using as little water as possible. We preferably dissolve the tablets directly in the separator with from 10 to 15 cc. of water; 50 cc. amyl alcohol are added and the liquids in the separator are heated on a steam-bath. When hot enough, sufficient ammonia is added to make distinctly alkaline, using litmus paper as an indicator. Shake vigorously for ten minutes. Cool and draw off into a second separator. Wash out the amyl alcohol with 5 cc. of water and add these to the first watery solution. Filter the amyl alcohol into a 250 cc. Jena flask through a funnel with a cotton plug moistened with amyl alcohol. If the amyl alcohol is not absolutely clear it does not matter, as long as the above outlined precautions are observed. Rinse the remaining contents of the first separator into the second separator with 50 cc. of amyl alcohol, heat again on water-bath and shake for ten minutes. Be sure that the liquids are sufficiently alkaline. After cooling and separating, repeat the shaking-out once more. The united amyl alcohol filtrates are then distilled in a paraffin bath to a small volume. The last few cc. should be evaporated by inserting the flask in a large beaker containing boiling water. A bent glass tube is inserted into the flask in such a manner that it reaches nearly to the bottom, and the air is aspirated through the tube with a water-pump. In this way the last traces of amyl alcohol together with the ammonia liable to be present can be evaporated in a very short time. It is better to take the morphine out of the paraffin bath too soon rather than too late as too long drying in the paraffin bath decomposes the morphine. The recovered amyl alcohol may be used over and over again.

After drying the morphine, about 12 cc. 10/N Sulphuric acid and 20 cc. pure chloroform are added and heated on a water bath until solution of the morphine is effected and the chloroform driven off. Should some of the morphine have escaped solution, add more chloroform. Cool, add a few drops of cochineal T. S. and titrate back the excess of 10/N sulphuric acid. Calculate the amount of morphine:

1 cc. 10/N H_2SO_4=0.0376 grams morphine sulphate.

An accuracy to within 0.5% to 1% of the theoretical can readily be obtained by rigidly adhering to this procedure.—Proc. Penn. Phar. Assoc., 1912, pp. 306-307. (E. C. M.)

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Colloids in Medicine.—Prof. Dr. H. Bechold read a highly scientific paper on this subject at the jubilee meeting of the Verein Deutscher Chemiker at Freiburg. Besides colloids and crystalloids and their solutions he also spoke on the ultramicroscope, by which particles of one-one hundred thousandth of a millimeter can be seen, and the ultrafilter with pores of one-five hundred thousandth of a millimeter. The theory of electrolytic dissociation and osmotic pressure has also been utilized in a practical manner in biologic, especially in uric acid diathesis. —Ph. Post, 1912, No. 47, 494. (O. R.)

Congress of Pharmacists of Poland.—The first congress of Polish pharmacists was successfully held at Lodz on May 25 and 26, 1912. A great many papers were read and twenty resolutions were adopted, which have to be consulted in the original report.—Ph. Post, 1912, No. 48, 509. (O. R.)

Iron: Acid-proof Composition.—Iron alloys containing a certain percentage of chromium are usually used in the manufacture of apparatus which should resist the action of acids, but are not absolutely acid proof. The German metallurgist, Prof. Borchers, of Aix-la-Chapelle, discovered that by the addition of 2 to 5 percent of molybdenum to an iron composition containing more than 10 percent of chrominum, an absolute acid proof alloy is obtained. A composition of 35 percent iron, 60 percent chromium and 5 percent molybdenum is unaffected even by hot aqua regia. This alloy has the tenacity of cast iron and can be worked the same. Titanium and vanadium may be used instead of molybdenum, but the latter is preferable.—Sc. Am., 1912, Vol. 107, 191. (O. R.)

Saffron: New Adulterant.—The French expert, Eugene Collin, sent a sample of crocus from Tyrol which, according to his analysis, was adulterated with flowers of *Cynara cardunculus* or *Cynara scolymus,* colored with an azo dye, to Prof. Jos. Moeller, of the pharmacognostic institute of the University of Vienna. Dr. R. Wasicky found that the adulterant consisted of flowers of *Onopordon acanthium,* which were loaded with barium sulphate and colored with a dye, soluble in water but insoluble in benzin. The article is profusely illustrated and should be consulted for particulars.—Ph. Post, 1912, No. 44, 462-464. (O. R.)

Synthetic Remedies: 25 Years.—Dr. A. Eichengruen, in his address as chairman of the Section on medico-pharmaceutical chemistry of the Verein Deutscher Chemiker, at their twenty-fifth anniversary at Freiburg, gave a very interesting account of the evolution of the synthesis of medicaments, which began in 1887 when the constitution of antipyrine was determined, the antifebrile properties of acetanilide were recognized and when the first antipyretic of the aromatic series, namely, phenacetin, was prepared synthetically. (Vide address by Chairman of Historical Section A. Ph. A., at Denver meeting, J. A. Ph. A., October, 1912). The author deplores the fact that up to the present time we have no definite law between chemical construction and physiological action.—Ph. Post, 1912, No. 47, 493. (O. R.)

Medicine Bottles: Return to Pharmacies.—Dr. Schamelhout, at the meeting of the Brussels Pharmaceutical Society, took a new viewpoint by claiming that the pharmacist is in better position to cleanse and disinfect the used medicine bottles than the public. If bottles, once used, were to be destroyed, this would be an economic loss of about one million francs in Belgium.—Ph. Post, 1912, No. 7, 81. (O. R.)

Methyl Alcohol: Toxicity.—Dr. Walther Hausmann reviews the literature on this important and timely subject. As early as 1869 Richardson gave out his law that the toxicity of the alkaloids increase according to their molecular weights, which are as follows:

Methyl Alcohol	32
Ethyl Alcohol	46
Propyl Alcohol	60
Isopropyl Alcohol	60
Isobutyl Alcohol	74
Amyl Alcohol	88

The toxicologist, Lewin, however, found that methyl alcohol is more poisonous than ethyl alcohol according to experiments on animals. I. Harnack explains this by the oxidation to formic acid in the organism. Birch-Hirschfeld proved the paralyzing effect of methyl alcohol on the optic nerve. The author reviews the use of methyl alcohol in the industries and also the cases of poisoning in Russia, Hungary, Germany and America.—Ph. Post, 1912, No. 30, 317-319. (O. R.)

Filtration of Liquids Containing Very Fine Precipitates: Preparation of Filter.—Shreds of filter paper are ground in a mortar and are mixed with plenty of water. Allow the coarser fibres to subside and pass the turbid liquid through the filter. The filter paper thus prepared will retain very fine precipitates suspended in a liquid, which will ordinarily pass through the filter.—Sc. Am., 1912, No. 26, 579. (O. R.)

Ice Cream: Manufacture by Cold produced Electrically.—The ordinary method of freezing ice cream by ice and salt is a striking example of economic waste, as 100 gallons require one and one-half tons of ice and 800 pounds of salt and neither of them can be recovered, and the ice melts very rapidly. Electricity is now conserving these materials by producing artificial refrigeration for the manufacture of ice cream and the freezers are also driven by electric power. Statistics show that during five years, from 1906 to 1910, the consumption of ice cream in the U. S. advanced from 55 to 100 million gallons annually. During 1911 about 120 million gallons were consumed, an average of five quarts per capita.—Sc. Am., 1912, No. 26, 579. (O. R.)

Horsehair: Detection of Artificial Color and Vegetable Fibres.—To detect artificial color of horsehair, heat with water, alcohol, ether, diluted hydrochloric acid or ammonia water. To detect vegetable fibres add sufficient concentrated sulphuric acid to cover a sample and set aside for six hours in a well-closed vessel. Horsehair is scarcely attacked, but vegetable fibre is quickly carbonized. Another test is to boil a sample with solution of potassium hydroxide, which quickly dissolves horsehair but does not attack vegetable fibre, except turning it brown. —Ph. Zhalle, 1912, No. 24, 672. (O. R.)

Quality of Unimportant Drugs.—Puckner, W. A., presents some observations on the unreliability of unimportant medicaments, and points out that the quality of an article or a commodity, in general, is directly dependent on demand and competition. That is, if there is a large demand for an article, and if a considerable number of firms put it on the market, then its quality is likely to be of a high order. On the other hand, substances which are not sold under competition are frequently unreliable and inferior. Puckner calls attention to a number of articles sold as medicine that were found to be distinctly inferior to the quality claimed for them.—J. Am. M. Assoc., 1912, v. 59, pp. 1156-1158. (M. I. W.)

Restricted Materia Medica. — Hynson, Henry P., in commenting on the desirability of a more restricted materia medica from the standpoint of the pharmacist, points out that therapeutic nihilism has had about as much effect on the misuse of drugs as political nihilism has had on the misuse of governmental power. He believes that the enforced, restricted or superficial knowledge of the agents that medical men are using is to be thoroughly blamed for the present unrestricted materia medica, which means an untaught, unlearned and uncertain materia medica accompanied by a reckless and meaningless use of many, if not all, of the materials contained therein.—J. Am. M. Assoc., 1912, v. 59, pp. 1158-1159. (M. I. W.)

Certified Pharmacies.—An editorial (J. Am. M. Assoc., 1912, v. 59, p. 461), discusses the practicability of establishing a standard for certified pharmacies, and points out that while the requirements for such certifications should be carefully considered, the need of a dividing line between the druggist, whose energies are chiefly devoted to the sale of cigars, chewing gum, soda-water, and patent medicines, and the pharmacist, to whom one may safely entrust the compounding of prescriptions, is so urgent that the medical practitioner will look forward to the outcome with much interest. (M. I. W.)

Materia Medica: Teaching of.—Stewart, F. E., believes that it would be a great advantage to those who are teaching materia medica if they could limit the Pharmacopoeia to really useful drugs. But unfortunately there is such a difference of opinion among therapeutists that it would be difficult to accomplish.—J. Am. M. Assoc., 1912, v. 59, p. 1164. (M. I. W.)

Useful Remedies.—Wilbert, M. I., reports on the work of the Committee on Useful Remedies, and states that a list has been compiled and agreed upon by the members of the Council on Pharmacy and Chemistry of the American Medical Association, and will be offered tentatively in the form of a manual for ready reference, with the request that American practitioners generally make such suggestions as will tend to make the final list representative of the best in the materia medica of American medicine.—

J. Am. M. Assoc., 1912, v. 59, pp. 1163-1164. (M. I. W.)

Materia Medica, Teaching of.—Hare, Hobart A., thinks that half the number of hours that are devoted to lectures on materia medica could be more advantageously employed if there were no state boards, because at the present time teachers are forced to teach facts which will not be used in practice merely because they will be used in state board examinations.—J. Am. M. Assoc., 1912, v. 59, p. 1165. (M. I. W.)

Medical Education.—An editorial (J. Am. M. Assoc., 1912, v. 59, pp. 650-654), reviews the report of the Council on Medical Education for the year ending June 30, 1912, and presents a number of tables showing the number of students in attendance and the number of graduates from the several medical colleges during the years 1880 to 1912, inclusive. It also presents a table showing the number of colleges closed since 1904. Of the 65 medical colleges which have ceased to exist, 37 were closed by merger, and 28 became extinct. While the total number of colleges is growing smaller and approaching more nearly the normal supply for the country, it is encouraging to note that the number of high-grade, stronger colleges is constantly increasing. In 1904, only four medical colleges were requiring any preliminary education in advance of the usual high school education; now there are forty-five requiring one or more years of advance college work. The total number of medical colleges in the United States at the present time is 116, a net reduction of 50 from the maximum in 1904. (M. I. W.)

Drugs, Action of.—Wallace, George B., discusses the influence of pathologic conditions on the action of drugs, and points out that the assumption drawn from pharmacologic experiments are frequently misleading to the clinician. He points out a number of instances of differences in drug-action in the healthy and diseased animal, and suggests the importance of enlarging on the field of pharmacologic research so as to include a study of the possible variation in the action of potent remedies.—J. Am. M. Assoc., 1912, v. 59, pp. 839-841. (M. I. W.)

Quality of Drugs.—Kebler, L. F., calls attention to the work that is being done in connection with the Bureau of Chemistry to improve the quality of drugs on the American market. He divides drugs into three classes, chemicals, crude drugs, and prepared mixtures, such as pills, tablets, galenicals, etc. Chemicals, he states, are, on the whole, of satisfactory quality, while crude drugs are commodities which cause the greatest amount of disturbance. He calls attention to a number of crude drugs that have been found to be below the standard prescribed by the Pharmacopoeia, and points out that with the operation of the proviso in Section 7 it is extremely difficult to eradicate adulteration in its various forms. He also states that a considerable number of tablets and pills offered to the trade and to the medical profession direct have been examined and found wanting in certain respects, but concludes that since laboratory work was begun there has been marked improvement in the chemicals, crude drugs and mixtures, though there is room for further improvement.—J. Am. M. Assoc., 1912, v. 59, pp. 1604-1606. (M. I. W.)

Pharmacist, Status of.—Kraemer, Henry, presents some thoughts on the position of the retail pharmacist as a purveyor of pure drugs. He points out the great increase during the past 25 years in the number of drugs that are being used or offered for sale, discusses some of the factors in the improvement of drugs and points out the need for cooperation between pharmacists and physicians in the work of eliminating inert and otherwise objectionable medicaments from the materia medica.—J. Am. M. Assoc., 1912, v. 59, pp. 1599-1603. (M. I. W.)

Drugs, Standardization of.—Sollmann, Torald, in discussing the current problems of pharmacology and therapeutics, points out that the standardization of drugs is a matter which is vital to the progress of therapeutics. Most important at the present moment is probably the progress of pharmacopoeial revision and the relation between pharmacists and physicians because its proper solution is essential to applying the drug standards in a satisfactory manner.—J. Am. M. Assoc., 1912, v. 59, p. 833. (M. I. W.)

Patents and Trade-Marks.—Wilbert, M. I., discussing the present status of the law relating to patents and trade-marks, points out some of their shortcomings, and expresses the belief that for the protection of the inventor, no less than for safeguarding the inherent rights of the public, it would appear desirable to simplify the present legal procedure necessary to establish the validity

of a patent and also to extend to patents generally the system of preliminary publication now used in connection with the registration of trade-marks.—J. Am. M. Assoc., 1912, v. 59, pp. 834-835. (M. I. W.)

Patents and Trade-Marks.—Stewart, F. E., discusses the relation of the patent and trade-mark laws to materia medica nomenclature, and suggests that the U. S. Pharmacopoeial Revision Committee issue an annual list of new drugs, giving proper names to them and including trade names as synonyms.—J. Am. M. Assoc., 1912, v. 59, pp. 836-838. (M. I. W.)

"U. S. P. and N. F. Propaganda."—An editorial (J. Am. M. Assoc., 1912, v. 58, p. 640), in commenting on the various efforts to supplement the "Propaganda for reform in proprietary medicines," points out that the "U. S. P. and N. F. Propaganda" of the pharmacists falls short of the ideal in that it merely aims to substitute a ready-made, usually complex and unscientific mixture of known composition, for a ready-made, equally complex and unscientific mixture of unknown composition and may mean that the physicians who previously used certain proprietaries uncritically will be led to use just as uncritically the preparations from which the proprietary was derived. (M. I. W.)

Nobel Prize.—An editorial (J. Am. M. Assoc., 1912, v. 59, p. 1548), points out that the Nobel Prize in medicine for 1912 has been awarded to a member of the staff of the Rockefeller Institute for Medical Research in New York. Alexis Carrel, who brings this honor to American medicine, was born in France in 1873 and graduated as doctor of medicine from the University of Lyons in 1900. Shortly afterward he came to this country and worked for a year or two in the physiologic laboratory of the University of Chicago, where he accomplished remarkable results in the suture of blood-vessels, and began his work on the transplantation of organs. Soon after the opening of the Rockefeller Institute for Medical Research in New York he joined its staff, and it is there that he has done the work for which he now receives the Nobel Prize. (M. I. W.)

Candy Medication.—Fantus, Bernard, suggests the use of candy tablets, particularly for insoluble and tasteless substances such as calomel, yellow iodide of mercury, arsenic trioxide, tartar emetic, nitroglycerin, elaterin, and scopolamine. For 100 tablets of a substance whose dose is to be 1-100 grain, each tablet to weigh 3 grains, the following formula may be used:

Active ingredient.....	1 grain
Cacao butter.....	9 grains
Powdered sugar.....	290 grains

Talcum, not to exceed 3 percent, may be added to prevent sticking of the tablets to the punches. This addition is not necessary when the tablet contains a considerable amount of insoluble powder.

The ingredients are thoroughly triturated and then compressed in the tablet machine. The 3 percent of cacao butter, as suggested by Schleimer, admirably serves the purpose of a cohesive agent for prescription quantities of tablets.—J. Am. M. Assoc., 1912, v. 59, pp. 842-844. (M. I. W.)

Atropine, Use of.—Mosenthal, Herman O., reports some observations on atropine therapy in diabetes mellitus and concludes that he could observe no indication that atropine sulphate effects any change in the carbohydate tolerance of sufficient importance to make the drug of clinical value in the treatment of this disease.—J. Am. M. Assoc., 1912, v. 58, pp. 777-778. (M. I. W.)

THE SPIRIT OF RESEARCH.

It has often been said that research is an attitude of mind. This is something different from the mysterious features which are sometimes attributed to it. The spirit of research is attainable, even if at times it seems remote. Quoting Donaldson: "A man may have little leisure and trifling resources, and may never have published; but if he examines the world in a questioning spirit, if he carries with him not only conclusions, but the observations on which they rest, if he refuses to pound square facts into the round holes that he happens to have in hand, he has attained illumination."—*Journ. A. M. A.*

Of General Interest

NEW ENGLAND LETTER.

ERNEST C. MARSHALL, Boston.

Those members of the A. Ph. A. who have read the interesting story of Mary Antin's amalgamation into American citizenship as told in her most interesting story, "The Promised Land," would doubtless fail to recognize, unless familiar with Boston pharmacies, her description of "Mr. Pastor's showy drug-store at the corner of Washington and Dover Sts.," as the establishment of our esteemed fellow-member and erstwhile Treasurer, Mr. S. A. D. Sheppard. The incident she relates of his kindness to her in her great distress of mind, is so like our good friend that the mental picture which she draws of him is easily recognizable by all who know his genial, kindly heart and sympathetic nature. But in reading the story the query rises,—From whence did she derive the name "Pastor"? The use of this name could not have been because of the desire not to use the true name, for her book is full of instances of the use of them: Edward Everett Hale, Mr. Hurd of the Transcript, Mr. Swan and others, and only in this one case apparently does she give a pseudonym. I wondered in thinking of the matter if "Sheppard," in Yiddish or in Hebrew, had any connection with the word "Pastor," but I cannot find upon investigation that it has, and therefore I conclude that Miss Antin must have been mistaken in the name.

Of course, the incident she relates regarding her kindly treatment in this store, is not an unusual one; it probably occurs in some store in every city almost weekly with a like setting and result. But it is gratifying to observe by such an account as this what such an act means to the poor person, who, timid and frightened from previous experiences with arrogance and unkindness, bears away with lightened heart, not only the restoring medicine, but kindly sympathetic words, even though they be expressed in the sentence, "Look out for wild Indians." A trifling incident truly, but like the little candle's beams, "So shines a good deed in a naughty world." With its feeble light it emanates a great and glowing radiance by which others may be guided and from which may come that which will be like the bread that returned "after many days."

Men have different ideas regarding the conduct of business and the antithesis of the Mary Antin incident is shown by another case. A man, not a druggist, I am glad to say, said to me the other day, "You can't succeed in life without being dirty, and I don't propose to be unsuccessful." I wondered if that man could by any possibility realize the import of what he was saying; the picture which he drew of himself? To be "successful" in the world he would be "dirty,"—would do mean things: would degrade himself; make his word untrustworthy and faithless. And I fear that there are others like this man who seem to accept this idea as a guide for themselves in the conduct of their lives, and these, too, not always the rude and uncultivated. A man occupying a high official position in this state is accused of being one whose word cannot be trusted and he is a most successful man. What manner of man is that which Dean Archer of the Suffold Law School portrays, and yet this man aspires to be termed "Your Excellency"! How must the shades of the honorable and gentle men grieve, as they look down from above upon their successor in the chair of Andrew and of Wolcott, at this misfit occupying the place they dignified. Out upon such doctrine! How it contrasts with the dying words of Scott to Lockhart, "My dear, be a good man, be virtuous, be religious, be a good man. It is the only thing which will bring you comfort when you come to lie here," or with the creed of one man who says for his daily guide:

"I would be true, for there are those who trust me:
"I would be pure, for there are those who care:

"I would be strong, for there is much to suffer:
"I would be brave, for there is much to dare:
"I would be friend to all,—my foe; the friendless:
"I would be giver and forget the gift:
"I would be humble, for I know my weakness:
"I would look up and love and laugh and lift."

The Commencement and Class Day Exercises of the Massachusetts College of Pharmacy occurred on Thursday, May 15, with President C. Herbert Packard presiding. The order of exercises was:

Prayer, by Rev. A. R. Williams.

Address, by Mr. Charles Zueblin, "Science and the Sciences."

Presentation of Candidates for the Degrees, Dean, Theodore J. Bradley.

Calling of the Roll, Secretary Lyman W. Griffin.

Conferring of the Degrees, President C. Herbert Packard.

The Degree of Phar. D. was conferred upon 35 students, and that of Ph. C. upon 8 students.

At the conclusion of the Commencement Exercises the Annual Dinner of the M. C. P. Alumni Association took place, with President Acheson presiding. This dinner was entirely informal and no set speeches were given. At 8:30 o'clock the Class Reception and Dance occurred at Horticultural Hall, for which the Salem Cadet Band furnished the music. Dancing was continued until one a. m., when the exercises of the day ended.

CONNECTICUT.

Fairfield. R. E. Randall of Torrington is fitting up the corner-store in the Freeman Building as a pharmacy, and expects to open the same about the time of our going to press.

New Haven. Charles Hull has purchased the drug store of John Alling at 141 Dixwell avenue. Mr. Hull for many years managed the Wilson Pharmacy and later was with A. F. Wood's Sons.

Manchester. Samuel Nelson opened a modern pharmacy on the nineteenth ult. in the corner store of the Odd Fellows' block, on the corner of East Center and Main Sts. The prescription department will be in charge of Elmore C. Packard, formerly of the Grant Pharmacy. The fountain is from the Lippincott Co.

James Magnell of Rockville succeeds E. C. Packard as druggist at the Grant Pharmacy.

Hartford. Robert Rubin is to open a drug store at No. 99 Connecticut Boulevard, which will be the only pharmacy in its entire length.

Carl Sheldrick, recently of the Godwin Drug Store, and Paul A. Alderman, formerly connected with Goodwin's, are to open a store at the corner of Main and Pearl Sts., in the premises recently vacated by the Conn. River Banking Co.

Waterbury. "The Brown Druggists" are enlarging their store on East Main St. by removing their prescription department to the second story of the building, giving them about twenty feet of added floor space in their main store. Mr. Brown has recently purchased the Buckingham Pharmacy, corner of Bank and Grand Sts. and will refit the same.

MAINE.

Bath. Harry M. Wilshire, formerly of Gorham, has opened a drug store which he proposes to make a first-class pharmacy in every respect.

Belfast. The Old Corner Drug Store in Pythian Block has been recently greatly improved by the addition of plate-glass windows and a general overhauling which makes it one of the most up-to-date pharmacies of the city.

Biddeford. Henry D. Cosgrove and Belle E. Breslin of Maplewood, Mass., were joined in marriage on April 10 last at Southern Pines, N. C. They will make their home in this city, where the groom is associated with his father in business.

Machias. Rufus Trussel Crane, probably the oldest druggist in Maine at the time of his decease, passed away at his home on the twenty-third ult. at the age of 81 years 2 months and 3 days. For fifty-five years he was actively engaged in the drug business in this town, and had been for several years a member of its Board of Selectmen. He was a member of Harwood Lodge, F. & A. M., and of Washington R. A. Chapter. His widow and two children survive him, Edna, the wife of Arthur W. Bowker, a prominent druggist of Brookline, Mass., and Frank T., who carries on the business established by his father in this town.

McAdam. William Logan is preparing to

open a pharmacy in this town at an early date.

Portland. Elmer W. Parker has been taken into partnership by his father and the firm will be known as George H. Parker & Son.

Rockland. Lachance & Leighton have dissolved partnership, Mr. Edward B. Leighton retiring on account of ill health. Mr. Fred J. Lachance will continue the business, with J. H. Wiggin as prescription clerk.

The forty-sixth Annual Meeting of the Maine State Pharmaceutical Association will occur at Portland on June 24, 25 and 26. A large attendance is expected at this meeting.

MASSACHUSETTS.

Andover. Franklin H. Stacey, Ph. G., has purchased the W. A. Allen store and will combine the business of his former location with that of Allen business in the store formerly occupied by the latter.

Boston. Two old-time pharmacists passed away in this city the first week of the month. Samuel A. Neill died on May 4, and Charles A. Miller on May 5, both at the age of 63 years. Mr. Neill was prominent in the wholesale business and Mr. Miller was a retail druggist, long in business in Roxbury.

Mr. James F. Finneran, President of the Woodward Drug Co., has been confined to the house during the past month with a threatened attack of appendicitis.

Fitchburg: The clerks of the Fitchburg Drug Co. entertained their friends on the evening of April 21 at a social dancing party. About twenty couples were present and a most enjoyable evening was passed by all those who participated in the function.

Trustee Henry W. Estabrook of the College is one of a Committee of three appointed by the Citizens' Committee of 100, to frame a new charter for the city.

Lowell. The contract to supply drugs to the city dispensary was awarded to Falls & Burkinshaw, who were the lowest bidders in a field of four competitors. Not the best way to secure the best drugs.

Salem. Frederick E. Bigelow has opened a new store at the corner of Lafayette St. and West Ave. Mr. Bigelow was for fifteen years a clerk for George N. Harris, at the corner of Leach and Lafayette Sts.

Taunton. The Drug Clerks' Association has elected the following officers for the ensuing year: President, James Gilchrist; Vice President, Walter Gorham; Secretary, Elmer Clapp; Treasurer, Joseph L. Welch.

Worcester. H. A. Burdett, one of the oldest druggists of Clinton, has closed his store and entered the employ of H. L. Green of this city.

Pittsfield. Charles I. McCarty has purchased an interest in the Melville Pharmacy on North St., and will assume charge of the drug department of that corporation.

Stoneham. Mr. Ralph R. Patch of the E. L. Patch Co. reports the arrival of "the stork" at his home with a welcome burden of a seven-pound suffragette. Mother and babe are in the best of health and spirits.

NEW HAMPSHIRE.

Franklin Falls. Rodney A. Griffin has purchased the interest of Mrs. Ada A. Jackman in the Jackman & Griffin store and will conduct the business on his own account.

Wolfeboro. Joseph Robins, a druggist of this town for thirteen years, has given up business here and removed to Lynn, Mass., to enter the employ of Riker-Jaynes Company.

RHODE ISLAND.

Pascoag. Edward Cunningham of Malone's Pharmacy has purchased a drug store in Providence.

Providence. Thomas Grady's drug store was burglarized on April 16 and a small amount of cash and goods was taken. From appearances the work was that of amateurs in the business.

Olneyville. Byron Smith has recently refitted his store.

VERMONT.

Brandon. The meeting of the Vermont State Association will take place at this beautiful town in June and a large gathering is expected to be present. Brandon is noted for its quarries of statuary marble and is a very attractive summer resort.

Burlington. The Vermont Board of Pharmacy has reorganized by the selection of D. F. Davis as President, M. G. Beebe as Secretary, E. G. MacClallen, Treasurer. The other members of the Board are W. L. Gokay and W. F. Root.

Rutland. Lucian J. Trudel reports regarding propaganda work in that locality that its results have been fairly good.

The Pharmacist and the Law

SCOPE AND APPLICATION OF THE FEDERAL FOOD AND DRUGS ACT.

In the May issue of the JOURNAL (p. 646) there was published a discussion of the recent decision of the United States Supreme Court interpreting the scope and application of the Federal Food and Drugs Act of June 30, 1906, by Charles Wesley Dunn, Esq., of the New York Bar.

Mr. Dunn desires to supplement his former remarks by the following:

I have received so many letters of inquiry relative to the Wisconsin decision that I find the effect thereof is not generally understood.

It must be borne in mind that the Supreme Court expressly reaffirms the doctrine established in the case of Savage v. Jones, 225 U. S. 501. It is necessary to read these two decisions together in order to correctly understand the attitude of the court.

As stated in the analysis sent you the court only condemns such state laws as frustrate or interfere with the operation of the act of Congress. The question naturally arising is—when does a state law frustrate or interfere with the National law? What is the practical application of this general doctrine? *Will any difference between a state and national law constitute such a conflict as will be condemned?*

Let us examine the facts in the two decisions in point.

In the Savage case above referred to the Indiana Feeding Stuffs law was in issue. This law required a statement of the ingredients contained in the feeding stuffs offered for sale and sold in Indiana. In the Federal Food and Drugs Act Congress has not required the statement of the ingredients, except in specific instances where morphine, etc., are present. Congress has therefore limited the scope of its requirements. That which the Indiana law required is not included in the National law. The court asks: "Can it be said that Congress, nevertheless, has denied to the State, with respect to the feeding stuffs coming from another State and sold in the original packages, the power the State otherwise would have to prevent imposition upon the public by making a reasonable and non-discriminatory provision for the disclosure of ingredients, and for inspection and analysis?" The court further remarks: "Undoubtedly Congress, by virtue of its paramount authority over interstate commerce, might have said that such goods should be free from the incidental effect of a state law enacted for these purposes. But it did not so declare."

The court holds that the fact that Congress has not required the ingredients to be declared, has seen fit to circumscribe its legislation and to occupy a limited field cannot lead to the conclusion that Congress intended to supersede the exercise of the police powers by the State as to matters not covered by the Federal legislation. Such an intent cannot be implied unless the Act of Congress is in actual conflict with the State law.

The test is—the repugnance or conflict must be direct and positive, so that the two acts, National and State, cannot be reconciled or consistently stand together.

Applying this test to the facts the court finds that the Indiana Statute is valid, that the additional requirements are not in any way in conflict with the Federal act. That the State law can be sustained without impairing in the slightest degree the operation and effect of the Federal law. There is no question of conflicting standards or of opposition of State and Federal authority.

In the Wisconsin Corn Syrup cases, recently decided, the label in issue had been expressly approved as a proper and legal label under the Federal law. The Wisconsin law declared the label so expressly authorized under the Federal law unlawful and prohibited the sale of this product so labeled by expressly providing that this product could only be sold or offered for sale by bearing its exclusive label. The conflict between the National and State regulations is direct and positive and the two could not stand together, for, if the Wisconsin Statute is valid, then the label, legal under the Federal act, is illegal under the Wisconsin act when the product is sold or offered for sale in Wisconsin, though still in interstate commerce when so sold or offered for sale.

Let us take an illustration clearly showing a conflict which is direct and positive.

The Federal act permits the use of ben-

zoate of soda in catsup, or any food, if properly labeled to indicate that fact. Assume that the State law prohibits the sale or offering for sale of food containing benzoate of soda. Catsup containing benzoate of soda is shipped in interstate commerce to a retailer in a state who places the bottles of catsup on his shelves for sale at retail, properly labeled to conform to the Federal law. Can the State law prohibit the sale of this catsup? The answer must be no. The State and National regulations are surely in direct and positive conflict and to sustain the validity of the State law would mean the absolute denying to the retailer the legal right to sell this catsup, although it is still in interstate commerce, subject to and conforming to the act of Congress.

A conflict in standards of purity affords an open and shut example of a direct and positive conflict.

In considering the various differences in the labeling requirements the distinction or conflict is not always so clear.

Let us take for the purpose of illustration the net weight laws applying to drugs. The Federal Act is silent in this respect, making no requirement that the net contents be declared on the label. The New York Law, Chapter 80, Laws of 1912, requires such a statement in the case of all drugs—except as exempted—sold or offered for sale in New York. It cannot be doubted that the State of New York, assuming that there is no conflict with the National law, is entitled, in the exercise of its police power, to require such a statement. Such a situation appears to be on all fours with the situation disclosed in the Savage case, above. It can hardly be maintained that the two acts, National and State, cannot be reconciled and cannot consistently stand together. If the net contents is stated as required by the State law there will be no violation of the Federal law or no overriding of any express provision contained therein.

Turning now to the Gould amendment of the National law, requiring food to be labeled with a statement of the net contents. Congress has expressly provided that no penalty of fine, imprisonment or confiscation shall be enforced for a violation of these provisions as to domestic products prepared prior to 18 months after the passage, to wit, September 3, 1914.

Assume that various packages of Quaker Oats, for example, are shipped in interstate commerce to a retailer in North Dakota. The North Dakota law requires that the net contents be declared in the case of food sold in that State. The packages of Quaker Oats are not labeled to indicate the net contents. Is the State law invalid as a law in conflict with and repugnant to an act of Congress, in the light of the decisions of the court?

The distinction in this instance is not so apparent as in the illustrations given above.

Let us examine the situation. The National law requires the statement of the net contents as also the North Dakota law. So far as the affirmative requirements are concerned the laws are in harmony. While the North Dakota law is now in force and effect, Congress has declared that no penalty of fine, imprisonment or confiscation shall be enforced for any violation of the provisions of the Federal law as to domestic products until September 3, 1914. Is the repugnance or conflict so direct and positive that these two laws, National and State, cannot be reconciled or consistently stand together? Can it be said that Congress has denied to the State the power the State would otherwise have to regulate the sale of foods? Congress has not expressly declared that such goods shall be free from the incidental effect of a similar state law. Did Congress intend by virtue of this exemption to supersede the exercise by the State of its police power.

Congress creates a situation which for practical purposes is on the same footing as if there were no Federal law prior to September 3, 1914. Congress has acted but postpones the enforceable application of its enactment for some eighteen months. *Congress has expressly declared that the law enacted under its Constitutional power shall have no legal force for some eighteen months.* There can be no question that on and after September 3, 1914, the North Dakota law will be valid. Can it be said that during the interim the State law may be declared invalid as a conflicting law? The North Dakota law, if enforced, does not impair the operation of any affirmative provision of the Federal law. Making the same requirement these two laws can consistently stand together. The North Dakota law, therefor, is within its legitimate power and valid.

ABSTRACTS OF LEGAL DECISIONS.

INFRINGEMENT OF PATENT—JURISDICTION. In a suit for injunction to restrain the infringement of the complainant's patent for an improvement in acetyl-salicylic acid, known in pharmacy as "aspirin," it appeared that the defendant conducted a mail order business. He resided in Windsor, Canada, from which place he solicited orders in the United States, and he there received orders and remittances in payment therefor, but all his goods were kept in a warehouse in Detroit, Michigan. He imported goods in bond to Detroit and paid the duties there. This warehouse was in charge of an employé who received and stored and cared for all goods, and on instructions from defendant filled all orders and made all shipments. It was held that the defendant had "a regular and established place of business" in Detroit, and that his employé in charge there was his "agent engaged in conducting such business" within the meaning of section 48 of the Judicial Code. Where he sold and had shipped from his warehouse articles alleged to infringe a patent, he was subject to suit for infringement in that district under said section by service on his agent. Preliminary injunction was granted.

Smith v. Farbenfabriken of Elberfeld Co., C. C. A., 203 *Fed.* 476.

MISTAKEN SEIZURE—REVIEW AFTER FIVE YEARS DELAY.—In 1899, George Leuders & Co. imported a case of chemical compound under the name "Citroline," which was claimed by the appraisers to have been undervalued. They alleged that the merchandise was in fact "Ionone," a patented product then owned by Haarman & Keiner, which, mainly, if not entirely by reason of the patent, commanded a much higher price than "Citroline." A suit was then pending by Haarman & Keiner against George Leuders & Co. for infringement of the patent in which it was subsequently held that Citroline was not Ionone nor an infringement. Some years before the action was decided the case of Citroline had been seized, forfeited, and sold for undervaluation. It is now held that under these circumstances a delay of five years after the sale is not such laches as to debar the importer from maintaining a libel of review to reclaim the net proceeds of the property, which still remained in the registry of the court, the government having suffered no loss because of the delay.

United States v. One Case Chemical Compound, 203 *Fed.* 63.

TRADE-MARKS AND TRADE-NAMES. In a bill for an injunction to restrain the defendant from using the word "Telinko" as the name of a bitter wine, it appeared that J. Hollander gave A. Hollander permission to manufacture and sell wine according to a certain formula under his trade-name and trade-mark of "Telinko," but he did not give him an exclusive right nor part with his original rights. It was held that the registration of the trade-mark by A. Hollander could not deprive J. Hollander of his right to subsequently use the formula and trade-name, though the latter had gone out of business for a time, but without abandoning his rights.

Friedman v. Hollander Bros. Drug Co., Pennsylvania Supreme Court, 86 *Atl.* 194.

SALE OF NARCOTICS. Under Georgia Penal Code, 1910, section 459, one who sells morphine to another, not on the order or prescription of a licensed physician, dentist, or veterinary surgeon, is guilty of a misdemeanor, without reference to whether the seller be the proprietor of a drug store or merely the employé of such a proprietor. An instruction to the jury by a trial judge embodying this principle of law is held not to be subject to the criticism that it was argumentative, or contained an expression of an opinion, or was misleading or confusing.

Oppenheim v. State, Georgia Court of Appeals, 77 *S. E.* 652.

"FOOD" HELD TO COVER NON-ALCOHOLIC DRINKS. In proceedings under the Missouri Food and Drugs Law (Rev. St., 1909, sections 6592-6605), the defendant was charged with having in his possession, with intent to sell, a bottle filled with soda water, which was adulterated with saccharin, and with having in his possession, with intent to sell, a bottle filled with soda water, which was misbranded by having blown thereon the words "Phos-Ferrone Mfg. Co." The defendant's contention that the statute did not cover non-alcoholic drinks was not sustain-

ed. Section 6593 provides: "The term 'food,' as used in this article, shall include all articles used for food, drink, confectionery, or condiment by man or animal, whether simple, mixed or compound."

State v. Tief, Missouri Supreme Court, 154 *S. W.* 1133.

LIABILITY FOR INJURIES FROM BOTTLE EXPLOSION. Action was brought by an employé of a railroad news company against the company and a soft drink manufacturing company for the loss of an eye caused by the explosion of a soft drink bottle. The plaintiff had been supplied by the news company with several bottles of soft drinks, which were kept in an ice box in the smoker of the train on which he ran. After selling some fruit, he went to the ice box to get some of the bottles. Just as he raised the lid one of the bottles exploded, a piece of glass striking him in the eye, destroying the sight. He did not see what kind of a bottle it was that exploded, but it was a soft drink bottle. It was not seriously contended that there was any evidence to show negligence on the part of the news company. The negligence alleged on the part of the manufacturing company was in selling and delivering to the news company soft drinks in bottles too heavily charged or improperly charged or filled.

It was held that, in the absence of any direct testimony, or any fact or circumstance from which it could be reasonably concluded that the manufacturing company knowingly used defective bottles, it could not be held liable on that ground, even though the bottle which injured the plaintiff was defective, which the proof in the case utterly failed to show. The accident might have happened in one of several ways. The day was very hot, and the explosion might have resulted from the hot air coming in contact with the bottle. A piece of ice might have fallen against the bottle and caused it to explode; or the explosion might have occurred because the bottle was too heavily charged, or the bottle itself was defective. The evidence being equally consistent with any of these views, it followed that the plaintiff had failed to make out his case, and the defendants could not be held liable.

Stone v. Van Noy Railroad News Co., Kentucky Court of Appeals, 154 *S. W.* 1002.

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ABSTRACTS OF U. S. TREASURY DECISIONS.

(T. D. 33192—G. A. 7432.) BROMINATED INDIGO PASTE—DUTIABLE AS COAL TAR COLOR. Protest was made against the assessment of duty on merchandise described on the invoice as "indigo in paste," "Ciba Blue G paste" and "Ciba Blue G D paste." The article consists of a combination of bromine and chlorine with synthetic indigo, and is used in dyeing cotton, wool and silk. The Board of General Appraisers hold that it was properly held dutiable as a coal-tar color under paragraph 15, tariff act of 1909, and not as indigo paste, that term being limited commercially to an indigo treated with sulphuric acid.

(T. D. 33377.) ESSENTIAL OILS. Oil of cypress, oil of cloves, oil of cardamom, and oil of pennyroyal, obtained by processes of distillation applied to the leaves or other natural forms of the cypress, clove, cardamom or pennyroyal plants, are held dutiable *eo nomine* as essential oils under paragraph 3, tariff act of 1909, in which a specific description of them appears.

National Aniline and Chemical Co. v. United States, U. S. Court of Customs Appeals.

(T. D. 33357, 33359.) ALIZARIN ASSISTANT AND CASTOR AND OTHER OILS. Appeals have been directed by the Treasury Department from the decisions of the Board of General Appraisers of March 26, 1913 (T. D. 33304), involving the classification of so-called alizarin assistant, and of February 28, 1913 (T. D. 33263), involving the classification of clove castor and other oil, the percentage of castor in the combination being 72 percent.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

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REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

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Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio.

A CORRECTION.

The Editor is advised by Prof. W. A. Puckner that the article "Prescription Fakes and Health and Beauty Talks," published in the May issue (p. 619), which was reprinted from the *Kansas State Board of Health Bulletin*, and credited to that publication, first appeared in the *Journal of the American Medical Association*. The Editor hereby tenders his apologies for the error in giving credit.

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M. I. WILBERT RESUMES WORK.

Mr. M. I. Wilbert, Assistant Pharmacologist in the U. S. Public Health Service, who has been seriously ill for some weeks, has recovered sufficiently to resume work at his desk in the Hygienic Laboratory, Washington, D. C.

Mr. Wilbert is one of the most indefatigable, as well as one of the most careful and conscientious workers in American Pharmacy, and the members of the A. Ph. A. will be universally pleased to learn of his restoration to normal health.

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A. PH. A. MEMBERSHIP PRIZES.

The following college prizes, consisting of nominations to membership in the A. Ph. A. and payment of the first year's dues, have been reported to the General Secretary. The latter will be pleased to receive notification of any other awards made this year:

St. Louis College of Pharmacy:

To Clarence Earl Armstrong, of West Plains, Mo.

Brooklyn College of Pharmacy:

To Israel Schwartz, of the Post-Graduate Class, and Joseph Caruso, of the Senior Class.

Philadelphia College of Pharmacy:

To Cyrus T. Gilbert, for the best term average in Theoretical Pharmacy during his Senior year.

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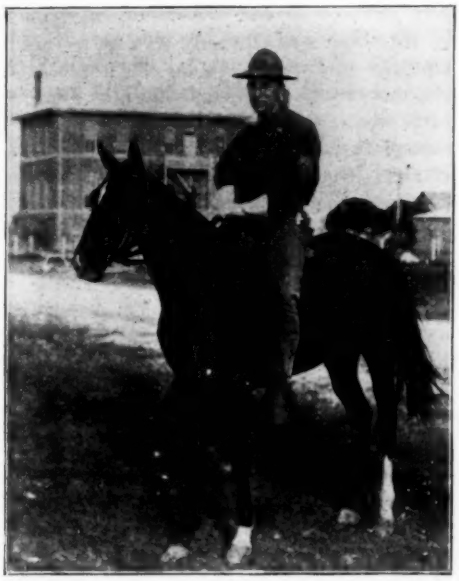
SERGEANTS OF THE HOSPITAL CORPS BANQUET.

The mobilization of troops of the Second Division at Galveston and Texas City, and the presence in the harbor of four United States transports, has been the occasion of several unusual gatherings among officers and enlisted men. Another of these "get-to-

gether" affairs occurred Saturday evening, May 18 at the Elite cafe when twenty-seven first-class sergeants of the hospital corps were present at a stag dinner. It is said that this is the largest number of first-class hospital corps sergeants that have ever gotten together; fifteen were assembled at San Antonio in 1911 and ten or twelve three or four years ago in the West. There are but 300



H. W. RIESS, Sgt. 1st Cl., H. C., U. S. A.

sergeants of this rank in the United States Army and they are scattered throughout this country and island possessions.

Those attending the dinner were:

From Second Division—H. W. Riess, C. S O., Second Division, Texas City; Y. L. Bowers, Sixth Cavalry, Texas City; W. E. Crampton, Fourth Field Artillery, Texas City; E. M. Pennypacker, Second Battalion Engineers, Texas City; H. Killikelly, ambulance company, Texas City; O. V. Everett, ambulance company, Texas City; H. Aicklen, field hospital, Texas City; A. Bednarski, field hospital, Texas City; E. Burke, field hospital, Texas City; B. Hardenbrook, field hospital, Texas City; C. S. Elliot, Twenty-third Infantry, Texas City; W. E. Whelan, Twenty-sixth Infantry, Texas City; P. O'Brien, Twenty-seventh Infantry, Texas City; F. O. Nicodemus, Fourth Infantry, Galveston; C. A. Aldridge, Fourth Infantry, Galveston; H. Meade, Nineteenth Infantry, Galveston; E. H. Simons, Twenty-eighth Infantry, Galveston; C. N. Shaw, Eleventh Infantry, Texas City; M. Heatherly, Eleventh Infantry, Texas City; W. E. Luse, Eighteenth Infantry, Texas City; C. H. Jorte, Twenty-second Infantry, Texas City.

From Fort Crockett—E. Stephenson, Post Hospital, Fort Crockett.

From Base and Port of Embarkation—Holland, Medical Supply Depot, Galveston.

From Transports—M. Kelly, Kilpatrick; M. Weinberg, Meade; I. Hopkins, McClellan; A. F. Hare, Sumner.

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CHICAGO BRANCH ANNIVERSARY.

On the occasion of its seventh anniversary the Chicago Branch issued a very attractive prospectus in the form of a four-page folder, the matter of which, though not the style of typography, is represented below. The example is one which might be followed with profit by other A. Ph. A. Branches:

"Pharmacia vera Prevalebit." The American Pharmaceutical Association, Chicago Branch; organized February 13, 1906. Our Seventh Anniversary.

The Chicago Branch of the American Pharmaceutical Association is seven years old, though these seven years do not represent the age of infancy, for the Branch sprung into being a well-developed organization.

Under the leadership of pharmacists of such fame as Hallberg, Oldberg, Eliel and Ebert, the Branch was organized February 13, 1906, with a membership of 56. Within one year the membership had trebled, and during the seven years 250 names have been added to the roll.

Since its inception 60 years ago, the American Pharmaceutical Association has held as its object the advancement of the science and art of pharmacy and the improvement of pharmaceutical practice. The Chicago Branch has consistently endeavored to uphold this declaration of the parent association, as the record of these seven years fully proves.

Among the important principles discussed and advocated by the Branch, or the move-

ments successfully undertaken by it, may be enumerated the following:

1—The Advancement of Pharmaceutical education by:

(a) Higher preliminary educational requirement of candidates for examination by the Illinois Board of Pharmacy.

(b) Inclusion of time spent in schools of pharmacy in the practical experience required of registrants.

(c) Graduation from a school of pharmacy as a prerequisite before registration.

2—Better Relations Between Physicians and Pharmacists:

A declaration on the prescription which originated in the Branch, was revised by a joint committee from the American Medical Association and the Branch, and was adopted by these and other medical and pharmaceutical associations of Chicago, as follows:

"First. The prescription is an utterance of the prescriber, who alone should direct and control its employment. It should, whenever practicable, carry the name of the patient, the patient's age in years, if a minor, and the date when the prescription was written."

"Second. The pharmacist who prepares the medicine should retain the prescription as a record for a certain limited period, not less than five years, for the protection of the precriber, himself and the patient." (This principle has since been incorporated into the Illinois Pharmacy Law.)

"Third. The medicine prescribed should be supplied not more than once on the same prescription: (1) if ordered by the prescriber 'not to be repeated' (non-repetitur); (2) if containing medicinal substances commonly called narcotic or habit-forming drugs; (3) if called for by some person known not to be the original holder."

"Fourth. A copy of the prescription may be supplied and should be written on a special blank, containing a declaration that it is a copy of a prescription which has been delivered to the original holder, and is not to be refilled except on order of the prescriber, and that the copy is made without recourse to possible error."

The propaganda for the prescribing by physicians of U. S. P. and N. F. preparations, and the crusade against the use of nostrums in prescriptions, were materially advanced by the Branch. The Physicians' Manual of the U. S. P. and N. F. was compiled by Prof. C. S. N. Hallberg and published and distributed by the A. M. A. An exhibit of some 200 U. S. P. and N. F. preparations was prepared by members of the Branch and displayed at the 1908 national convention of the A. M. A. The dispensing physician and prescribing pharmacist evils have received extensive discussion, with the presentation of several suggestions for their cure.

3—The Revision of the National Standards in Pharmacy:

The U. S. P. IX and N. F. IV have received much attention, many meetings having been devoted to the discussion of changes in formulae and the introduction of new remedies in these standards. The history of, pharmacopoeial revision and of the national forumulary, as well as the progress of the present revision of each, has been presented. Among the members of the Branch who are members of one or the other revision committees are: Dr. W. A. Puckner, Professor A. H. Clark, Wilhelm Bodemann, Professor H. M. Gordin, Prof. C. M. Snow. Mr. F. W. Meissner, a member of the Branch, is a member of the board of trustees of the Pharmacopoeia.

4—Laws Affecting Pharmacy:

Much attention has been given by the Branch to proposed new laws, both national and state, relating to pharmacy, and particularly to obtaining desirable amendments to the Illinois Pharmacy Law. Such amendments relating to more advanced requirements for registration, to more complete suppression of the narcotic drug evil and to pure and standard drugs have been strongly advocated by the Branch.

5—Pharmaceutical Practice:

The Committee on Pharmaceutical Practice has been very active, and a number of profitable meetings have been devoted to New Formulas, New Remedies, Improvement of Old Formulas, Working Methods, etc.

6—The Drug Business:

Various phases of the commercial side of pharmacy have been ably discussed by representative men before the Branch. Among such topics may be mentioned "Early and Sunday Closing," "Profitable Side Lines," "Why Some Druggists Don't Make More Money," "The Building-Up of a Drug Business."

Finally, the social side has not been neglected. Several pleasant entertainments have been presented, and the warm handshake and social converse are a feature at

each meeting. A number of ladies are constant attendants at the meetings, and "ladies' nights" are frequent. From time to time men of note have addressed the Branch on subjects of great pharmaceutical or popular interest, among whom may be mentioned Prof. Henry H. Rusby, Dr. Jenkin Lloyd Jones, Prof. John Uri Lloyd, Dr. James H. Beal, Dr. George Simmons, Dr. Andrew Winton, Dr. Lyman F. Kebler, Mr. Harry B. Mason.

This record of good achievement back of us, our present strong membership and the well-laid plans for further work promise not only that the future meetings and activities of the Branch will be very interesting, but also of great practical value to those interested in pharmacy.

All persons who desire to promote the progress of pharmacy and who reside in or adjacent to Chicago are urged to unite with us. This includes especially retail pharmacists, wholesale and manufacturing pharmacists, pharmaceutical teachers, editors and writers, food and drug law officials, etc. Membership in the Branch involves no obligation further than membership in the parent association.

OFFICERS SINCE THE ORGANIZATION OF THE BRANCH.

PRESIDENTS.

Oscar Oldberg	1906-1909
C. A. Storer	1910-1911
Jas. H. Wells	1912-1913

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Herman Fry	1906
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Mrs. M. M. Gray	1910
Charlotte E. Stimson	1911
Mrs. M. M. Gray	1912
A. W. Linton	1913

SECRETARY-TREASURERS.

W. B. Day	1906-1912
E. N. Gathercoal	1913

DECEASED MEMBERS.

Jacob Baur, Henry Biroth, Leo Eliel, H. P. Eysenbach, Edwin O. Gale, Carl S. N. Hallberg, A. E. Hiss, Louis Lehman, Oscar Oldberg, Thomas Whitfield.

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Professor W. B. Day, 74 E. Twelfth St.; L. A. Druehl, 2000 N. Park Ave.; Mrs. L. A. Druehl, 623 Alaska St.

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E. D. Irvine, 536 S. Clark St.

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Wilhelm Kramer, 4016 Lincoln Ave.

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J. A. Mahaffy, 652 E. Eighty-ninth Place; Frank M. Mares, 2876 Archer Ave.; Charles E. Matthews, 221 Randolph St.; Charles E. McCauley, 103 Marion St., Oak Park, Ill.; H. McCousland, 4879 E. Ravenswood Pk.; John J. McClugage, 1134 E. Sixty-third St.; Charles H. McConnell, 122 N. State St.; Fred W. Meissner, Jr., 820 Main St., La Porte, Ind.; Frederick H. Meyer, 3207 N. Ashland Ave.; Albert Miller, 2058 Lincoln Ave.; George P. Mills, 1000 Davis St., Evanston, Ill.; Professor Maurice Miner, 31 W. Lake St.; J. W. Morrisson, 310 W. Washington St.; Charles J. Myers, 2840 S. State St.

Professor G. D. Oglesby, 200 E. Thirty-first St.

Professor C. W. Patterson, 31 W. Lake St.; J. H. Patterson, 3640 Cottage Grove Ave.; Thomas H. Potts, 122 S. Michigan Blvd.; Dr. Wm. A. Puckner, 535 Dearborn Ave.

E. H. Ravenscroft, 4757 E. Ravenswood Pk.; Rudolph Rhode, 1301 N. Clarke St.

H. P. Sandkoetter, 52 Harrison St.; Stephen K. Sass, 1725 W. Eighteenth St.; Theodore I. Scheips, 534 Oakdale Ave.; Andrew Scherer, 1201 N. State St.; Chas. H. Schimelfening, 323 E. Garfield Blvd.; Louis A. Schmid, 11324 Michigan Ave.; Miss Rose P. Schmidt, 2133 S. Halsted St.; Fred M. Schmidt, 5 S. Wabash Ave.; C. F. Wm. Schultz, 159 Chicago St., Elgin, Ill.; George L. Secord, 6334 Wayne Ave.; M. A. Sheblessy, 3459 Indiana Ave.; Professor Clyde M. Snow, 74 E. Twelfth St.; Herbert W. Snow, 220 N. Franklin St.; Cloyde W. Snyder, 5301 Indiana Ave.; Wm. E. Snyder, 6140 Michigan Ave.; Harry E. Stadelmann, 7042 Stony Island Ave.; Louis C. Staudt, 15 S. Broadway, Aurora, Ill.; Otto P. Stephan, 132 E. Twenty-second St.; Charles E. Storer, East Ohio and Rush Sts.; John Stuchlik, 3859 W. Twenty-sixth St.; Alexander Caldwell Stuckey, 6352 S. Halsted St.; Franklin P. Summers, 1525 Winnemac Ave.

Professor George D. Timmons, 458 Greenwich St., Valparaiso, Ind.

Adolph Umenhofer, 2405 N. Halsted St.

Cornelius VanSchaack, 118 W. Lake St.; Arcadius Voiss, 1200 Wells St.

Lewis E. Warren, 1108 Garfield Ave.; James H. Wells, 241 S. Fifth Ave.; Max J. Wicarius, 3118 Lowe Ave.; Edward Williams, 4400 W. Harrison St.; S. W. Williams, 35 W. Twenty-fifth St.; Charles Wilson, 200 E. Thirty-first St.; W. W. Winberg, 5100 Lake Ave.; Louis Woltersdorf, 717 Ashland Ave.

Fred H. Young, 1759 Ainslie St.

Otto Zeman, 3002 S. Central Park Ave.

The Bulletin Board

TIME AND PLACE OF 1914 MEETING.

The Committee on Time and Place for the 1914 meeting is ready to receive for consideration suggestions or invitations for that meeting.

LEONARD A. SELTZER, Chairman,
32 Adams Ave. West, Detroit, Mich.

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AN APPEAL TO A. PH. A. MEMBERS.

As a member of the Membership Committee of the American Pharmaceutical Association I wish to call the attention of the members of this great Association to the duties they owe to it.

You are a member of it, you know what it is doing and has done to benefit every branch of Pharmacy in this country; you know that its undertakings are of such a broad nature that retail druggists, wholesale druggists, manufacturers, chemists, teachers, editors, clerks and everyone interested in pharmacy can find in it a field in which they can improve their conditions. Someone else knew this before you did and was kind enough to ask you to join it and to recommend you, thus giving you the benefits you are enjoying from it today. Now don't you think it your duty to ask your neighbor druggist to join it also, and you know if he has got one grain of appreciation in him he will always be thankful to you for doing him this favor. You will be helping him, helping the Association and helping yourself. There are about 40,000 drug stores in the U. S., every one of which should be represented in this Association, whereas only about 5 percent of this number are members.

If every member would get busy and use a little honest effort to get in new members for two months there would be such an avalanche of new applications that the Nashville meeting would go down in history as a veritable Pharmaceutical Mecca. The future of this Association is certain to have in store for it great things for its members. Its sixty years of usefulness has firmly established it as the center of all that is good in Pharmacy. As the laws have become more stringent, the benefits it offers will be more fully realized.

The South, which has been a little slow to realize what the Association stood for, is waking up to the necessity of joining it and there is an active campaign going on there now for new members in which the wholesalers are earnestly cooperating with the Membership Committee in their efforts, and unless all signs fail the records at the Nashville meeting will show many new names.

WILLIAM R. WHITE, PH. C.,
Chairman Entertainment Committee.

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TO THE MEMBERS OF THE SCIENTIFIC SECTION.

As you know the next meeting of the A. Ph. A. will be held in Nashville, August 18. We wish to make the meeting of the Scientific Section at this time a notable one, and to this end we must secure a creditable number of high class papers. We assure you that contributions from you will be greatly appreciated and request that you send titles of any proposed papers as soon as possible. According to our By-Laws, papers cannot be accepted unless the titles are in the hands of the chairman or secretary in time to be published in the last issue of the JOURNAL appearing before the meeting.

We wish to call your attention to the fact that the old Committee on Scientific Papers has been replaced by a Scientific Section, the membership of which is made up of all members of the A. Ph. A. who express their desire to be enrolled. If, therefore, you are interested in this Section and desire to be kept in touch with its work, please send your name at once to the secretary or chairman, and at the same time, if possible, send titles of the papers you expect to present at our next meeting. Very truly yours,

FRANK. R. ELDRED, Chairman,
3325 Kenwood Ave., Indianapolis, Ind.

Communications and Correspondence

All communications must be signed by their Authors

LIMITATIONS ON POWER OF BOARD OF PHARMACY TO MAKE RULES AND REGULATIONS.

EDITOR A. PH. A. JOURNAL:

SIR—I am pleased to inform you that the case of Commonwealth of Pennsylvania vs. B. W. T. Tobin, which was practically vs. Sharp & Dohme, as Mr. Tobin was our Philadelphia Agent, and the Pennsylvania State Pharmaceutical Examining Board, could only proceed against a local person and not against a Maryland or other foreign corporation, has on May 1st been decided in favor of Sharp & Dohme and against the said Pharmaceutical Examining Board. The case has been pending since August, 1910, due mainly to delays of one kind or another on the part of the Board, as we were quite desirous of having the case tested and settled, since it involved the broad and important question of reading regulations, adopted by an executive board into a law passed by a legislative body.

The case was one involving a bottle of Essence of Pepsin 1:2000, manufactured by Sharp & Dohme, which Sharp & Dohme have been supplying for the medical profession to the drug trade since 1888, and always of the same consistence, formula and digestive power. According to the Federal Pure Food and Drugs Act and the Pennsylvania Pure Food and Drugs Act of 1909, this Essence of Pepsin was correctly labelled and could legally be sold in Pennsylvania or any other state, and for the following reasons, to wit:

1. It was an established product for which a fixed demand has existed for twenty-three years and it has always given satisfaction.

2. It was correctly labelled, inasmuch as although it was not of the National Formulary digestive strength of 1:3800, it had plainly stated upon its label its correct and claimed digestive power of 1:2000.

3. It was found by the chemists of the Pharmaceutical Examining Board to be above the digestive strength claimed upon the label and was, hence, found to be a better product even than it was held out to be by Sharp & Dohme.

The Essence of Pepsin case was brought by the Pennsylvania Board to test said Board's right by law to make regulations arbitrarily established by itself part of the organic law of the state. Therefore this question is one of great importance to the drug trade all over the country, as there exists a growing tendency for Federal and State Boards, whose duty it is merely to execute laws passed by Congress or a State Legislature to formulate regulations and endeavor to enforce them as part of the organic law, respectively, of the country or state. The Sharp & Dohme Essence of Pepsin was made the test case, but it has been difficult to get the Pennsylvania Board to bring the case to trial as the Board evidently felt it had no strong case and that the case was going to be contested by able counsel and competent witnesses. As it involved a broad question of moment to the entire drug trade of the land, Sharp & Dohme had fully intended to take it up to the Court of Appeals, and if possible, to the U. S. Supreme Court, in the event that it had been shown that the case was one of interstate commerce instead of intrastate commerce.

The case came up for trial in the court of Oyer and Terminer before Judge Audenried in Philadelphia on Thursday, May 1, and was argued by Assistant State Attorney Maurer for the Commonwealth of Pennsylvania, representing the Pennsylvania State Pharmacy Examining Board, and by Messrs. Charles Biddle and Henry LaBarre Jayne of the firm of Biddle, Paul & Jayne of Philadelphia for Sharp & Dohme. The witnesses for the Board were Messrs. Rohrman of the Philadelphia Drug Exchange, Christopher Koch, Vice President of the Pennsylvania Examining Board, Professor C. H. LaWall of the Philadelphia College of Pharmacy, L. L. Walton, Secretary of the Board, and H. H. Blair of Philadelphia. The witnesses for Sharp & Dohme were Dr. A. R. L. Dohme, President of that corporation, and Dr. Herman Engelhardt, their chief chemist.

After the bottle of Essence of Pepsin had been brought into the case and Prof. LaWall had testified as to what was the U. S. P. and the N. F., and that he had found that the Essence of Pepsin had shown on digestion test by the U. S. P. method for testing

pepsin products, that it was not below its claimed and labelled strength of 1:2000, but considerably above it, and was, therefore, correctly labelled and not misbranded, the claim was made by the Assistant District Attorney that it was misbranded, because according to the regulations of the Board no Essence of Pepsin could be sold in Pennsylvania that was labelled Essence of Pepsin unless it was of the N. F. strength of 1:3800, i. e., one part would digest 3800 parts of coagulated egg albumen according to the U. S. P. test. Thereupon Mr. Biddle objected and gave as his reason for so doing that regulations were not laws and at once Judge Audenried interposed and said if your case rests upon the effectiveness of regulations drawn by your Board, then I wish to state most emphatically that the legislature of the Commonwealth of Pennsylvania never intended that such a body of men as constitute this Board or any Board, *should have the power to read regulations framed by them into the organic law of this state.* When Mr. Maurer admitted that that was the crux of the whole case, the judge ordered the jury to bring in a verdict of not guilty and dismissed the case.

This decision, hence, establishes for the drug trade the important fact that regulations drawn by executive boards appointed to execute Pure Food and Drug Laws have not the effect of law, and in so far as they affect or modify the law in any way are null and void. The Sharp & Dohme Essence of Pepsin case, hence, promises to be a crucial and important one for many existing conditions and cases pending based upon the regulations of executive boards held out to have the force of law. Very truly yours,

A. R. L. DOHME.

Sharp & Dohme Laboratories, Baltimore, Md.

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SUNDAY REST AND SHORTER HOURS.

EDITOR A. PH. A. JOURNAL:

SIR—To the real professional pharmacist the "wide-open" Sunday as exhibited by such a vast number of drug stores must ever be as a blot upon the good name of such an honorable calling. The writer is not familiar with the attitude of the A. Ph. A. in regard to the Sunday closing question, but he has become convinced, through long years of experience, that the drug store is kept wide open on Sunday for the single and sole purpose of making money. Pharmacy will never come into its own, nor will she be able to draw into her ranks the most desirable of men and women as long as this condition exists. Genuinely Christian men, who desire to be consistent, cannot keep their stores open on Sunday.

The hours of employment would not be legally tolerated in any other line of work. Any candid man will acknowledge that they are excessive.

Legislative enactment should place a maximum limit to the working hours. It is as important to the state that the health and happiness of the drug clerks be conserved as it is of any other of her citizens.

Proprietors drive the good clerks into business for themselves. It is but natural. The human element enters in. It is an ill-spent life devoted entirely to the pursuit of wealth. A clerk, who is married and has a family, must not only sacrifice his earnings but his Sundays as well. Family and home life are but a vague dream to him. It is a social wrong. It is awful for the wife and children. For one, I register my protest against it and plead for the cooperation of the A. Ph. A. to cure this cancerous growth.

Respectfully,

ELLIOTT D. COOK,

Red Bank, N. J. P. C. P., 1906.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

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NASHVILLE BRANCH.

One of the most enthusiastic and interesting meetings in the history of the Nashville Branch of the American Pharmaceutical Association was held at Furman hall, Van-

derbilt University, Thursday afternoon, May 8, with President J. O. Burge presiding.

A communication was received from Prof. W. B. Day, of Chicago, president of the Association, thanking the Branch for the use of slides giving stereopticon views of Nashville which were shown at their last meeting.

A large number of these slides have also been sent to the New York Branch to be exhibited at their next meeting. In these views are some beautiful productions of the scenery around the city and they are proving a great drawing card at the Branch meetings and will no doubt cause many to attend the meeting of the general association body here in August.

R. W. Vickers, of Murfreesboro, chairman of the publicity committee, reported the following as members of his committee: W. R. White and Ira B. Clark, Nashville; T. A. Robinson, Memphis; W. I. Gates, Whiteville; T. J. Shannon, Sharon; J. J. Ingle, South Pittsburgh; Sterling Miller, Chattanooga; A. C. Albright, Knoxville, and Lindsey Bunting, Bristol.

J. B. Sand, chairman of the hotel committee, made a full report, giving the rates the different hotels had made to the convention and the number of delegates each could accommodate.

Many inquiries are being made to the hotels about accommodations, and several large reservations have already been made, a whole floor being secured by the Boston delegation.

Ira B. Clark, chairman of the membership committee, reported that the secretaries of the boards of pharmacy and of the state associations of the South were showing much enthusiasm in cooperating with the committee in its campaign for new members. W. R. White, of this committee, also reported that the southern wholesale druggists were also rendering valuable assistance in this campaign by helping to distribute the literature.

Two applications for membership were received and approved.

A report was made by W. R. White, chairman of the entertainment committee, on some of the proposed features of the entertainment of the convention, and a general discussion followed in which many valuable suggestions were offered.

The offer of a prominent firm to donate half a carload of grape juice to the committee was ordered gratefully accepted.

Mrs. W. C. Anderson, chairman of the program committee of the Women's Section of the Association, which was recently organized, asked for space on the program for two sessions, and was referred to the Council.

A get-together meeting of the local druggists and their wives and daughters was decided on, to be held about May 20, W. R. White and J. O. Burge being appointed a committee on arrangements.

Dr. E. A. Ruddiman, who will give an address before the Georgia Pharmaceutical Association, was instructed to invite that body to attend the convention.

The election of officers being postponed, the Branch adjourned to meet again June 10 at the same place.

W. R. WHITE, Secretary.

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PITTSBURGH BRANCH.

The large number of members, students and visitors who were present at the meeting of the Pittsburgh Branch of the A. Ph. A. on Friday evening, May 9, were well pleased with the good things in store as revealed by the program when it was read, but all were much more pleased after the promised treat had materialized.

Dr. J. H. Beal's "Illustrated Talk on Yellowstone Park" was the feature of the meeting which was looked forward to with pleasant anticipation which was more than realized. Dr. Beal had with him lantern slide views of many interesting and curious objects to be met with in a trip through the park, and as each one was thrown upon the canvas, the doctor told what there was of interest to be said about it from his viewpoint. Throughout his talk the doctor brought out many incidents connected with his trip attaching to both himself and others of the party, and as all of its members were men and women prominent in pharmaceutical circles, these side references kept many of his auditors on the alert for some reference of a personal character concerning some person with whom they were acquainted. By this means, as the various scenes were thrown upon the screen, it made one feel just as though he or she was enjoying the actual trip while listening to a guide, with the added pleasure of hearing quaint re-

marks and personal allusions to members of the party thrown in.

Dr. Beal used no notes, but simply relied upon his memory and what the picture before him would bring to mind. Occasionally, there would come a view that did not awaken a responsive chord in his mind, and at such times the doctor would honestly admit the fact, and pass on to the next scene. This did not occur often, however, and only served to make his talk more intensely intimate and personal in its character. Dr. Beal explained to his hearers that he had not seen his collection of slides for at least ten years until he opened them up in the lecture hall for this occasion.

To those who have enjoyed the privilege of having heard Dr. Beal's lecture on "The Limestone Caverns of America" and have witnessed the remarkable set of views which accompany it, we would advise that they make use of their persuasive powers on the doctor to favor them with his "Illustrated Talk on the Yellowstone Park."

A very instructive and valuable paper was presented by Mr. C. E. Hoffman, a student of the Pittsburgh College of Pharmacy, in which he treated of Oil of Lemon, from its manner of production on down the line until it reaches the consumer. He dealt with the means and methods of adulteration, manner of assaying the oil for citral and some of the uses made of the latter in commerce. Mr. Hoffman also presented interesting facts concerning the near oils of lemon, such as Citronella, Bergamot, etc. This paper was followed by interesting discussion in which Drs. Koch, Emanuel and Saalbach joined, and many valuable points were brought out concerning Oil of Lemon and its constituent citral in commercial practice.

B. E. PRITCHARD, Secretary.

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ST. LOUIS BRANCH.

A regular meeting of the St. Louis Branch of the American Pharmaceutical Association was held in the St. Louis College of Pharmacy on Friday evening, April 18, with President Ilhardt presiding. The minutes of the February meeting and the report of the meeting held at the Missouri Botanical Garden (Shaw's garden), on March 17 were read and approved.

The Chair then took up the program and called upon Mr. Julius C. Hoester, who gave a comprehensive oral talk on Serum Therapy. In his opening remarks Mr. Hoester stated that the term Serum Therapy is a misnomer, for there is a vast difference between Serums, Bacterial Vaccines and Toxins. While he appreciated the fact that considerable confusion appears to exist in the minds of many people, due to the synonymous use of these names by unscientific persons either in their conversation or in their writings, there should not be any misapprehension of these terms by pharmacists, for they are capable of fully understanding their relative significance.

He then explained that Bacterial Vaccines or Bacterins are suspensions of killed pathogenic bacteria in physiologic salt solutions; that a Serum usually implies the clear liquid which separates from the corpuscles and other constituents entering into the formation of the clot during the process of the coagulation of the blood from an animal which has been subjected to immunizing treatment with bacteria or their products; that Toxins are metabolic productions of pathogenic bacteria, which, injected into a suitable animal organism, are capable of inciting the elaboration of specific antibodies.

Continuing, he said that Bacterial Vaccines are prepared from cultures of pathogenic bacteria grown upon suitable culture media under the most favorable conditions. After a careful count of the bacterial suspension is made the organisms are killed and the suspension is diluted with a sterile physiologic salt solution to obtain the desired bacterial content in each cubic centimeter, then 0.2 percent tricresol is added as a preservative.

Serums are made by a process which first requires the preparation of the toxin or killed cultures. With Antidiphtheric Serum and Antitetanic Serum, pure cultures of diphtheria or tetanus bacteria are grown on boullion. As the germs grow a toxin is produced and after a time the bouillon becomes an aqueous solution of toxin, which is filtered to remove all bacteria. The clear filtrate which contains only the toxin is then injected into a healthy horse, beginning with very small doses. The dosage is gradually increased until the horse is thoroughly immunized and his blood is charged with antitoxin. The horse's jugular vein is then tapped and a quantity of the blood is collected in sterilized glass tubes, which are

closed with plugs of sterile cotton. These are then set aside until the clot separates. The serum is then decanted, a preservative is added, and after being assayed for its antitoxin value, it is put into glass bulbs or syringe containers, ready for use.

The Antistreptococcic and Antigonococcic Serums are produced by injecting killed cultures of the specific bacteria into horses instead of the toxins, otherwise the process is the same as for the other serums.

The therapeutic action of a serum or vaccine when injected into a human being depends upon its power to counteract the poisons or toxins developed in the body by infectious diseases or to render the person immune for a time to the disease.

As to the proper serum or vaccine to use will depend the correct diagnosis of the disease. If the infections are localized, or semi-localized, Bacterial Vaccines are most useful, but in acute general infections the serums should be used. However, neither are infallible, and should be regarded as an auxiliary means of treating the infectious diseases, and as supplementary to the other sources of modern surgery and medicine.

He then classed the vaccines as Stock Vaccines and Autogenous Vaccines. The Stock Vaccines are those prepared in bacteriologic laboratories, and are produced from strains of virulent bacteria obtained from reliable sources. Autogenous Vaccines are especially prepared for use in a given case from cultures of bacteria obtained from the patient himself, and are administered to the patient from whom the original culture is obtained.

Mr. Hoester then briefly described the process of preparation of the bacterial vaccines which now have a recognized place in modern therapeutics, such as Gonococcus, Staphylococcus (in three varieties, albus, aurus, citreus), Streptococcus, Furunculosis, Typhoid, and Colon Vaccines, etc.; also those which will come into more general use, but have not passed the experimental stage, as Neoformans, Pneumococcus, Micrococcus Catarrhalis.

Mr. Hoester was then asked the question, "What are Phylacogens?" Answering, he said that the term Phylacogen has been coined to identify a number of modified bacterial derivatives prepared by Parke, Davis and Company, according to a method originated by Dr. A. F. Schaefer, of California, and used in the treatment of infectious diseases.

Phylacogens are neither bacterial vaccines nor sera as is usually understood by the popular mind, but are sterile aqueous solutions of metabolic substances, or derivatives generated by bacteria grown in culture. They are made from a large variety of disease-producing bacteria, and after being killed, are removed by filtration through porcelain. The paper was discussed by Messrs. Leo Suppan, Gustav Kring, J. W. Mackelden, Louis Lieberstein, W. K. Ilhardt, Sidney Willette.

A vote of tnanks was extended Mr. Hoester and on motion, the meeting adjourned.

J. W. MACKELDEN, Secretary.

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CHICAGO BRANCH.

The regular monthly meeting of the Chicago Branch of the A. Ph. A. was held at the University of Illinois school of pharmacy building, Tuesday evening, May 20.

Upon motion by Mr. Gathercoal, seconded by Dr. Bernard Fantus, and after discussion and careful consideration, the following resolution was adopted:

"*Resolved,* That we endorse the proposition and recommendation of the Committee on Drug Reform of the A. Ph. A., which is embraced in the following statement:

"First. That every one who dispenses medicines, whether pharmacist, dispensing physician or other person, shall be responsible for the quality of such medicines dispensed.

"Second. That all drugs and medicines, by whomsoever dispensed, shall be subject to the same supervision, inspection and examination, as applied to the stocks of dispensing pharmacists and shall be held to the same standard, namely, that established under the Food and Drugs Act.

"Third. That physicians who dispense their medicines, except in emergency, shall be required to write the prescription therefor over his signature, serially numbering, dating and filing the same. Said serial number, date and signature, together with proper directions, shall be placed upon package or container in which said medicine is dispensed. The prescription files of such physicians shall be open to the same inspection and supervision as those of pharmacists."

The principal topic of the evening was

the A. Ph. A. building. The discussion was lead by President Day. He said: "The marked growth of the American Pharmaceutical Association during the last seven years, its increase in influence no less than in membership, and more especially the development of a strong monthly JOURNAL, with the advantages that this implies—all these features serve to emphasize the need of a center around which the activities of the Association may be collected to and from which they may extend through the whole field of pharmacy.

"Looking back over the history of our Association, we may trace the successive steps in its upbuilding. Early in its life, the importance of having a permanent Secretary was discerned, and how well the selections were made is apparent when we consider that two men filled this office for nearly half a century, J. M. Maisch from 1865 to 1893, and Chas. Caspari, Jr., from 1894 to 1911.

"To a limited extent, then, the office of the permanent Secretary became the headquarters of the Association's activity in the interval between the annual meetings. But how meager were the advantages thus afforded for carrying on the work without interruption! A year ago our present Secretary stated that the Association did not possess a complete set of its own proceedings—and naturally the opportunities for accumulating a library such as exchanges for our proceedings would have afforded—were lost beyond recall.

"Not the least advantage of a permanent home—a fireproof building where suitable equipment and facilities could be provided—would be this very feature of developing a library—exchanges with our JOURNAL, books sent for review, and donations of books by members, would in a short time result in a collection of books of considerable proportions and be of great assistance to pharmaceutical research.

"Our historical collection would provide the beginning for a museum which, through the efforts of our Historical Section would in time become an important feature. Many interesting pharmaceutical relics would be presented to such a museum if the donors could be assured that the exhibits would be safely cared for and yet be available to the inspection of those who were interested.

"Of more immediate need to the Association is a suitable laboratory where opportunity could be given for testing the formulas for the official standards, the Pharmacopoeia and National Formulary, as well as for the proposed Receipt Book. Special research work might also be undertaken here, such as was contemplated when the Centennial Fund was established. Should the Association decide to establish a Council on Proprietary Medicines—as has been recently suggested—a laboratory would be a prime requisite.

"The proposed A. Ph. A. home would constitute a true memorial to our illustrious dead, whose memory could be perpetuated by tablets suitably inscribed and placed in its library. Pharmacists of the type of Procter, Maisch, Prescott, Ebert, Hallberg, Oldberg and others whose names will come to our minds in this connection would be most appropriately honored in this manner.

"The office of the Secretary and the rooms devoted to the publication of the JOURNAL, the National Formulary, Receipt Book and such other publications as the Association may undertake, will, of course, be located in this building, which should be so constructed as to allow for additions as needed.

"The home should be located on a convenient but not costly site, preferably in a large city so as to furnish the publication facilities required, and we believe should be reasonably near to the center of population of our country.

"Two financial considerations present themselves: First, the raising of a fund to purchase a site, and to erect a building and equip it. Second, to provide for the necessary expenses of supporting such a home and of utilizing its possibilities as fully as possible. With the growth of the JOURNAL, the larger income from membership and the available proceeds from our permanent funds, I believe that the expense of supporting such a home may be safely assumed. But the problem of raising the fund amounting to perhaps fifty thousand dollars for the site and building, remains. I believe that a general call upon our members and the entire drug trade of the country, in this worthy cause, would meet with a liberal response. We have seen how quickly the Hallberg fund of nearly five thousand dollars, was raised. I am confident that the repsonse to our appeal for a building would be equally prompt and generous.

"And just a word, in conclusion. I wish we might avoid the use of the title 'A Ph. A. Home.' It has already caused some confusion regarding the real purpose of our project. 'Homes' of various kinds, for the aged, indigent and infirm are common. So that there be no misundertanding, why not call it the A. Ph. A. Building?"

The project received hearty endorsement from many of the members present and the following resolution, offered by Mr. F. W. Meissner, was unanimously adopted:

"*Resolved,* The Chicago Branch of the A. Ph. A. heartily endorses the project of an A. Ph. A. Building, concurs in the sentiments regarding same expressed by President Day, and pledges itself to give all possible moral and financial support to the establishment and maintenance of such a building."

E. N. GATHERCOAL, Secretary.

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DENVER BRANCH.

The April meeting of the Denver Branch of the A. Ph. A. was held Tuesday evening, April 22, at the Albany Hotel.

The usual business meeting was preceded by a dinner, a custom which has done its share towards making the Denver Branch meetings so enjoyable and successful.

The meeting was called to order by President Hover about 8 o'clock and the minutes of the previous meeting were read and approved.

Before the regular program for the evening could be taken up, the question arose as to what had been done by the Council as to the publication of an annual volume by the A. Ph. A. After some discussion it was reported that so far as known the Council had taken no cognizance of our resolution. Whereupon Mr. Clayton moved to adopt the following resolution:

WHEREAS, The Denver Branch of the American Pharmaceutical Association, at its December, 1912, meeting, adopted a resolution voicing a protest against the action of the Council of the A. Ph. A. in discontinuing the publication of the annual volume of proceedings; and

WHEREAS, Said resolution has been printed and favorably commented upon by various pharmaceutical journals, thus evidencing that the protest is not merely a local one; and

WHEREAS, Up to the present time, the Council has taken no action toward a reconsideration of the subject; be it

Resolved, That we again call upon the Council to give this matter due consideration, to the end that a great majority of the members of the A. Ph. A., who are unable to attend the annual meetings, may not be deprived of the most valuable return for the investment made by them in the payment of annual dues; and be it further

Resolved, That copies of this resolution be sent to the members of the Council, and to the various pharmaceutical journals for publication.

The motion was seconded and the resolution adopted by a unanimous vote.

The program for the evening was now taken up, committee reports being the first in order.

The Membership Committee reported that no new members had been secured during the last month, but hoped to be in position to report an increase in the Association family at the next meeting.

The Legislative Committee reported that no adverse legislation had been passed by the session just ended, but that some good bills had also failed. The Cocaine Law was passed and will take effect July 1.

The Liquor Amendment, relieving druggists in dry territory of the burden of carrying a State Retail Liquor Dealers' license, failed to pass. The State evidently needs the revenue.

The Committee on Qualifications for Registered Pharmacists made the following report:

Your committee appointed at our last meeting to confer with the State Board of Pharmacy regarding the requirements by the Board for full registration and granting proper recognition to the Assistant, beg to submit the following report:

A meeting was arranged for and held at the Brown Palace Hotel March 19, 1913, W. F. Thebus, D. Y. Butcher, S. L. Bresler of the State Board being present and three members of your committee.

We presented our request that they raise their requirements for full registration and encourage the taking of the Assistant Certificate by Applicants failing to pass the requirements for full registration.

We reviewed the discussion had at our last meeting and assured the Board that in our judgment proprietors would recognize the Assistant Certificate if the conditions were fully understood by the pharmacists of the State.

Dr. S. L. Bresler, the Secretary of the Board, stated that for a number of years after the adoption of the pharmacy law the Board had not encouraged the recognition of the Assistant Certificate. This naturally discouraged the proprietors from giving employment to any but full registered clerks.

The continuing of this practice was discussed and the Board unanimously agreed to encourage applicants, especially young men and women, to work for the Assistant Certificate, as this will give them recognition under the law and every privilege granted by the law, except being permitted to conduct or manage a pharmacy on their own account, or assuming the management of such business for others.

The members of the Board assured us they were willing to do everything in their power to raise the standard of pharmacy in this State, and would, immediately after the next examination, issue a letter to all pharmacists, both registered and assistants, in the State of Colorado, informing them of such action, believing that in this manner full publicity will be given to proprietors and employes, and should result in stimulating every aspiring young person to obtain the Assistant Certificate as soon as possible, at the same time protecting the public from incompetent service.

The letter to be sent out under the seal of the State Board submitted to your committee, also to the Denver Pharmaceutical Association at their regular monthly meeting, your committee fully approve. It was also unanimously approved by the Denver Pharmaceutical Association.

We give you the letter as submitted, through the courtesy of Secretary of the Board, and is as follows:

"DEAR SIR—At the last meeting of the Board of Pharmacy, held in Denver, March 28 and 29, a new ruling was adopted to raise the standard of the assistant pharmacists and to grant them better rights than in the past. From now on the Board will recognize the assistant pharmacists in the temporary absence of the registered pharmacists, and every pharmacy, drug store, dispensary, and hospital will have to be at all times in charge of either a registered pharmacist, or in his absence, of an assistant pharmacist.

"Kindly take notice at this time, as the Board will inspect all the stores within a reasonable time, and would prefer to find all the stores conducted within the limits of the law."

In discussing the requirements for full registration and especially regarding the raising of said requirements to the equivalent of a college education, the members of the Board called our attention to the State law and the fact that this is not optional with the Board, but is prescribed by statute.

This may be a good point for the members of our Branch to bear in mind, and should an amendment to our present law be considered at the next session of the Legislature you may desire to have this covered at that time.

The members of the Board were unanimous in their request that your committee urge the members of this Branch to encourage a higher educational and moral training for the apprentice, assuring us they would do everything in their power to raise the standard of pharmacy in Colorado.

The Board do not at this time believe it advisable to formulate two sets of questions for the applicants for registration, but with their new rule of a higher percentage requirement for the full registration certificate and the recognizing of the Assistant Certificate are of the opinion that many advantages will eventually be obtained for the pharmacists of Colorado.

Before closing our report, we desire to extend to the members of Colorado State Board of Pharmacy our sincere thanks for their courtesy in calling a special meeting to hear your committee, for their cordial reception, for their interest shown in the work being done by the Denver Branch of the A. Ph. A., and for their expressed desire to assist in every legitimate manner possible, in bettering the conditions of pharmacy.

Respectfully submitted,

A. W. CLARK,
F. I. LORD,
EMMETT POWERS,
Committee.

It was moved to adopt the report. The motion was seconded and carried.

President Hover suggested that the Rocky Mountain Druggist publish a brief notice every month explaining the new Board of Pharmacy ruling. After a short discussion the committee was requested to see that this ruling received the proper publicity.

It was brought out that the daily papers who published the examination results did not give the names of those who passed for assistant. Mr. McKenzie suggested that the names of both classes be published without discrimination as "having successfully passed the examination."

The committee was requested to take this matter up with the State Board.

The Library Committee made the following report:

The Library Committee begs to make the following report of the progress of its work since your appointment of this committee, Febuary 18, 1913:

The first meeting of this committee was held March 4th at Mr. Alkire's store, all members of the committee being present. At this meeting the committee decided to send the following letter to all druggists in Denver and vicinity:

DENVER, COLO., March 6, 1913.

Brother Druggists:

Pharmacy of Colorado and Denver in special received a decided boost and a high and praiseworthy fraternal spirit was evident at the February meeting of the Denver Branch of the A. Ph. A. when this body went on

record in favor of establishing a pharmaceutical library in Denver. It may be easy to cast your vote in favor of a proposition of this nature, but more than this was done. Listen! Nine of the members present voluntarily subscribed a total of $160 in subscriptions ranging from $5 to $100 in less time than it takes to tell you about it. A snug number of pharmaceutical books were offered, including a copy of the U. S. P. of 1820; bound volumes of pharmaceutical journals; text books, etc., as well as the free use of a desk, shelf room and suitable quarters for housing the library at present. All in all, a fine start has been made and a committee appointed to carry out the work outlined.

To carry out the plan successfully this committee needs your support and aid, and this letter is a plea for same. We know it would be idle to elucidate the benefits to be derived from this library and we also feel sure that no comment on this point is necessary. But we do most earnestly solicit your support, whether financial, in form of books, or moral.

We shall appreciate a few dollars or less if you can afford it; we shall appreciate any book or literature along pharmaceutical lines or related sciences in English or foreign languages, new or old, that you may care to give; and, last but not least, we shall greatly appreciate your moral support;—that is, boosting the work, availing yourself of the benefits of this library and encouraging others, your clerks and apprentices in special (let them read this letter), to make use of it. For the greatest value of any library lies in the knowledge it disseminates.

Will you indicate on the enclosed card what support you can give us? Please sign it and mail to us now before the matter slips your mind. Thanking you, we remain,

Yours fraternally.

On March 7th, 184 of these letters were sent out, and a postal addressed to the Chairman enclosed with each.

A letter was also sent to President Fine of the State Association, asking for the transfer of the so-called "Library Fund" in the State Association Treasury to this committee. The following reply was received:

BOULDER, COLO., March 12, 1913.

Mr. F. W. Nitardy:

My Dear Nitardy—Replying to your letter regarding the $100 appropriation for the benefit of the Pharmaceutical Library, will say my memory was a little hazy on this point and before replying I wrote our Secretary for information as to status of this fund and now have his minutes before me.

From these it appears that this fund was to provide a permanent meeting place for the Board of Pharmacy and to provide equipment for same, all of which was to remain the property of the Colorado Pharmaceutical Association.

From this, the only record of our action taken at Manitou, our right to turn this fund over to the Denver Branch of the A. Ph. A. for a library seems a little doubtful, and though I should personally be very glad if we can do it, it seems to me it ought to come before the whole Executive Committee, and if in their judgment we have the right to so dispose of the fund, I would favor such action at our Glenwood meeting as would enable us to do so.

I am writing Mr. Clayton to this effect and will ask him to lay the matter before each member of the Executive Committee, and assure you it is my desire to see the fund turned over at the earliest moment consistent with our rights in the matter.

Yours truly, E. G. FINE.

This reply revealed that several of our members as well as your Chairman of this committee were in error about the conditions under which this fund had been placed in the hands of the State Association by the State Board of Pharmacy.

A letter was also sent to the Secretary of the Denver Pharmacy Association asking support for the library from this organization, with the result that this body voted $50 to our fund at its next meeting.

On April 8th the committee held its second meeting at Prof. Seymour's School of Pharmacy, all members being present, and outlined plans for further work. At this meeting a second letter to Denver druggists who had not responded to the first letter was decided on, and these were sent out soon after this meeting. This letter reads as follows:

DENVER, COLO., April 10, 1913.

Brother Druggists:

On the 6th inst. we wrote you in regard to the work of the Denver Branch of the A. Ph. A. towards the establishment of a Pharmaceutical Library. Nothing having been heard from you, we are taking the liberty to address you again on this subject in the hope that we may be favored with an expression from you.

It is the committee's aim to establish a library that will meet as nearly as possible the wishes and desires of every druggist in Denver, and to accomplish this we should greatly appreciate it if you will send us a list of such books as you would like to see placed in the library. You will greatly facilitate our work if you will do this now. It can readily be seen that without such an expression from you and other druggists the committee will be more or less at sea when it comes to purchasing books.

Hoping that you will favor us with your valuable suggestions at your earliest convenience, we remain, Yours fraternally.

Letters were also sent to a list of Pharmaceutical journals, asking them to put our library on their mailing list.

A letter to pharmaceutical authors was also written to be sent out as fast as the proper list can be collected.

In the meantime the Library Committee

received the following subscriptions towards the Library Fund:

W. A. Hover	$100 00
A. W. Clark	5 00
W. O. Scholtz	25 00
R. H. McKenzie	5 00
F. J. Lord	5 00
S. L. Bresler	5 00
John Best	5 00
S. T. Hensel	5 00
L. L. Alkire	5 00
H. Cordes	5 00
A. Swoboda	10 00
L. Wilson	5 00
F. W. Nitardy	5 00
Denver Pharmaceutical Association	50 00
J. A. Martin	5 00
A. S. Ryan	5 00
C. L. Bieser	5 00
H. M. Snider	5 00
Total	$260 00

Of this, $80 has been received by the Chairman.

The following books have also been offered to the Library:

U. S. P. of 1820 and U. S. Dispensatory of 1833, by C. M. Ford.

Gray's Lessons in Botany, 1879; Wood's Library of Standard Medical Authors, 1879, by H. Cordes.

Mercks' Index, 1896; Digest of Comments on U. S. P., by Mrs. Kern.

Green's Chemistry, 1829; Bottger's Qualitative Analysis, 1906, by Emmett Powers.

Manual of Therapeutics, P. D. & Co., by W. O. Scholtz.

The Modern Pharmacist—N. A. R. D.; Proceedings of the N. W. D. A. for 1906-7-8-10 and 11; Mercks' 1907 Index; Digest on Comments on the U. S. P., 1906 and 1908; State Pure Food and Drug Law, 1911; Proceedings of the New Jersey Ph. A. of 1907 and 1909; by the Rocky Mountain Druggist.

A set of Schimmel's Semi-Annual Reports from 1909 to date, by Mr. Barada of Kansas City .

Dr. Oldberg's "Pharmacy"—a very valuable text book on practical and theoretical pharmacy finished by Dr. Oldberg just before his death. Published and presented to us by Prof. George D. Oglesby of Northwestern University, Chicago.

"Medicinal Plants"—Millspaugh—two volumes containing 180 large color plates of medicinal plants, embodying over 1,000 drawings and describing medicinal plants indigenous to and naturalized in the U. S. These two most valuable volumes were presented to the library by Mr. E. L. Scholtz.

Bound volumes of the Druggists' Circular, about 20 years, by W. A. Hover.

Set of proceedings of the A. Ph. A., about 35 years, by John Best.

American Illustrated Medical Dictionary, by R. N. McKenzie.

King's American Dispensatory (2 volumes); American Homeopathic Dispensatory; United States Dispensatory, 1868; Urological Dictionary, King; National Dispensatory, second edition; Attfield's Chemistry; Bound volumes of the Druggists' Circular, 1884 to 1887, inclusive; Pharmaceutische Chemie, Fluckiger, 1879; United States Pharmacopœia, 1880; Essentials of Materia Medica, Garrod, 1865, by John A. Martin.

A portion of these books are in the hands of the committee now.

Respectfully submitted,

F. W. NITARDY,
JAMES SEYMOUR,
L. L. ALKIRE,
Library Committee.

It was moved the report be adopted and the motion was carried.

The ownership and name of the library were discussed. President Hover suggested that the Denver Branch continue in the ownership of the library for the present, and Mr. Lord suggested the library be known as "The Colorado Pharmaceutical Library." Both suggestions were adopted by motion.

The Special Committee appointed for the purpose presented the following resolution for adoption:

It is with the sincerest sorrow that the Denver Branch of the American Pharmaceutical Association announces the loss of one of its most valued members on October 18, 1912, when Lester B. Bridaham was suddenly called from his labors to that eternal rest which awaits the weary and toiling pharmacist.

The craft in Colorado has parted with one who had always held a warm place in the affection and esteem of his colleagues.

Mr. Bridaham's experience in pharmacy extended from the rudiments of bottle-washing through the career of dispenser and traveling salesman to the position he occupied at the time of death as manager and director of one of the largest establishments of its kind in the West. Varied experiences of our friend were such as to enable him to sympathize with and understand his fellow pharmacist in all his undertakings, and none were more ready than he to respond when occasion required, to render any assistance in his power. He was at all times a liberal giver and willing worker in all that made for the advancement of pharmacy and the betterment of those engaged in it.

In testifying feebly as we now do to the high character and services of our beloved associate, we extend to the bereaved family our deepest sympathy in their irreparable loss and commend them to the tender mercies of Him whose ways, though inscrutable, are most wise and just, and Who doeth all things well.

R. H. MCKENZIE,
CHAS. M. FORD,
Committee.

The report was adopted.

The Secretary reported that he had communicated with Prof. Ramaley on the subject of botanical excursions and received the following reply:

BOULDER, COLO., April 7, 1913.
Mr. F. W. Nitardy, Denver, Colo.:

DEAR SIR—Replying to your communication of recent date I regret to say that it will be impossible for me to serve as conductor for your excursions this summer. I shall be away from town most of the time, at least on Sundays, as I have already arranged to carry out some botanical studies that will take all of my spare time.

It occurs to me that you might be able to secure Professor Ellsworth Bethel, of the East Side High School, Denver. Mr. Bethel is a botanist of ability and knows really more about the local flora than any man living in the State.

Regretting that I cannot be of service to you, I am, Yours very truly,

FRANCIS RAMALEY.

The Secretary then wrote to Prof. Bethel and received the following reply:

EAST SIDE HIGH SCHOOL, April 20, 1913.
Mr. F. W. Nitardy, City:

DEAR SIR—I have your favor of the 17th inst. and in reply thereto will say that I do not know that I shall be able to join you in your excursions. I should be very glad to assist you in any way possible and should be pleased to determine any specimens which you may collect and where possible will go out with your party for a few hours, at least, if you will let me know when you are going. I suppose that most of you are familiar with the more common medicinal plants, such as the various sages, "Osha," Oregon grape, ergot (a fungus parasite of our grasses), aconite, etc. However, there are many plants which should be investigated. I believe that no work has been done along the line of research since the demise of my good friend, and co-laborer, John Kochan.

I usually have a Sunday engagement with the Colorado Mountain Club as naturalist and I believe that your members would get more from a membership in this club than from any other source, as their special interest lies in studying the local natural history. This organization has a number of members familiar with the more common plants, though I believe that no one is working on the technical phase but myself.

Let me know when you have your walks, and if possible I shall gladly give my assistance gratis where there is not too much time involved.

I have a good collection of plants poisonous to stock at the State House and propose arranging a set of all medicinal plants also, and should appreciate your cooperation in making it as complete as possible. I should be pleased to have you call at High School any day after 12:30 and talk the matter over with me. Yours very truly,

ELLSWORTH BETHEL.

The Secretary stated that Mr. Ford would report on the subject of transportation in connection with the excursions. Mr. Ford stated that he believed the street car would be the best means, as all other means would make the excursions an expensive proposition.

After some discussion it was decided to invite Prof. Bethel to the next meeting and have the discussion continued then.

The subject of a permanent home for the A. Ph. A., on the program for discussion, was also deferred to the next meeting.

The subject of a permanent home for the State Board of Pharmacy and the State and City Pharmaceutical organizations was next discussed. It was suggested that the State University in establishing its third-year course in Denver this fall may be induced to combine with us in this movement. As no definite information as to the plans of the various bodies interested was available, nor the amount of money available for this purpose from the various sources known, Mr. Nitardy moved that a committee of five, including the President of the Colorado Pharmaceutical Association, the President of the Denver Pharmaceutical Association, the Secretary of the Board of Pharmacy, the Dean of the Department of Pharmacy of the U. of C. be appointed by the President to investigate the feasibility of joint and permanent quarters and report at the next meeting. The motion carried and President Hover appointed the following committee:

Charles W. Ford, Chairman.
E. F. Fine.
L. L. Alkire.
S. L. Bresler.
Prof. H. C. Washburn.

The discussion of the subject was continued to the next meeting.

The subject of weekly druggists' luncheons was then taken up and discussed. No definite action, however, was taken on the matter as it was thought best to have the city Association take the subject up also.

Compound Syrup of Hypophosphites was then taken up. The question arose as to what means would best prevent the growth of mould and fermentation. It was brought out in the discussion that the syrup formed a very suitable media for the growth of

yeast and fungi and that proper protection against contamination of spores, etc., would eliminate the trouble. To this end it was suggested to keep the syrup in bottles not larger than one pint and sterilize same or rinse them with sulphuric acid and distilled water before using.

Compound Syrup of Phosphates and Decolorized Tincture of Iodine were also discussed. It was stated that experience had proven that the crystallization of Ca. Salts as well as discoloration through carmelization of the sugar in this preparation could be overcome by keeping the product in a refrigerator. Mr. Clayton suggested that a solution of Iodides might form a more agreeable and just as effective preparation as our present Decolorized Tincture.

The hour being very late, it was moved to adjourn.

F. W. NITARDY, Secretary.

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CINCINNATI BRANCH.

The deferred meeting (postponed on account of street car strike) of the Cincinnati Branch, A. Ph. A., was held May 27, 1913, President J. U. Lloyd presiding.

The minutes of the previous meeting having been approved, the Secretary read a communication from Prof. J. H. Beal, advising the election of a representative of the Cincinnati Branch on the Council, which being done, resulted in the selection of Prof. C. T. P. Fennel, the term being for three years.

Mr. Charles G. Merrell accepted the position on Committee on Transportation to the Nashville meeting, as well as to act as Chairman of a local committee to be selected by him, their duties being to devise ways and means for the entertaining of visiting members en route to the meeting.

Mr. Frank Freericks gave assurance of practical support in this direction on behalf of the American Druggists Fire Insurance Co.

Mr. Freericks spoke regarding the proposed Home and Laboratory of the A. Ph. A., urging Cincinnati as the best and most central location; and it was decided to have the President appoint a committee of three, the President being a fourth member ex-officio, with instructions to take active and energetic steps with the above object in view.

The business meeting being ended, the President introduced to the expectant audience the speaker of the evening, Dr. Otto Juettner, who in a delightfully entertaining manner presented his lecture, "Pioneers of Medicine in Cincinnati."

This lecture is highly instructive and the stereopticon views presented with it vie with the eloquence of the words of the speaker.

The lecture takes us back to the time of Benjamin Rush, one of the signers of the Declaration of Independence, a leader of men and one of the greatest teachers of medicine the world has ever seen; Elijah H. Smith, a medical philosopher and humanitarian of rare attainments; David Hosack, a surgical genius; Jacob Bigelow; Nathan Smith, whom S. D. Gross calls the best all-around American physician of his time, and many other men of similar caliber, who were blazing the path of progress on behalf of medical science in New England and throughout the eastern parts of our country. Thus he shows you that the early eastern physicians, at least those who took a leading part in the development of American Medicine, were educated men and not pioneers or self-made men in that sense of the term.

In the West, however, where every foot of ground had to be wrested from the embrace of primitive nature, the real pioneers in every line of human activity were produced. In the medical history of the West, he points out our great figure, whom he describes as the Father of Western Medicine, one of the greatest physicians America has produced, a nobleman by nature, the peer of any of the eastern pioneers in medicine, Daniel Drake, who died in 1852, who was one of the early settlers of Kentucky, and in 1840 was teaching at the Louisville Medical Institute.

Dr. Goforth, who came to Kentucky in 1788, but in 1800 moved to Cincinnati, then called Losantiville. He is credited with being the first physician in the West who practiced vaccination.

He calls Dr. John Hole the father of the local profession. He was among the first settlers in 1789. Among others he mentions John Filson, a physician who coined the name "Losantiville."

Israel Ludlow, who landed at Yeatman's Cove in 1788; Gen. Arthur St. Clair, who arrived at Ft. Washington, 1790, a graduate of the University of Edinburgh, and being an

enthusiastic member of the military "order of the Cincinnati," changed the name of the village, Losantiville, to Cincinnati.

The first obstetric event in the young village, the birth of David Cummins, after whom Cumminsville was named, suggests the name of the first midwife, Mrs. M. McKnight, of whom Dr. Daniel Drake speaks with much respect.

And so on the lecturer takes you through the years of Cincinnati, showing the growth and development of medical progress up to the present time.

The pictures and the manner of delivery are fascinating and the auditor reaches the end long before he is ready for it. At the conclusion of the lecture, Dr. Juettner was heartily thanked by the society, the auditors declaring themselves to have spent an entertaining and instructive evening.

Adjournment.

CHAS. A. APMEYER, Secretary.

Council Business

COUNCIL LETTER No. 13.

Philadelphia, May 5, 1913.

To the Members of the Council:

Motions No. 22 (*Appropriation of* $25 *for National Drug Trade Conference*), and *No.* 23 (*Election of Members; Applications Nos.* 118 *to* 154, *inclusive*), have each received a majority of affirmative votes.

The New York Branch submits the following communication:

"The members of the New York Branch of the American Pharmaceutical Association hear with much regret that the Council of the American Pharmaceutical Association has rescinded the motion passed at the Richmond meeting of 1910 directing the publication of the Report on the Progress of Pharmacy as a separate bound volume, and that the plan now proposed is to publish the Report piecemeal in the issues of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The members of the New York Branch consider such treatment of the Report as a serious error and have therefore passed the following resolution, which it submits to the Council through the General Secretary:

Resolved, That the New York Branch of the American Pharmaceutical Association requests the Council of the American Pharmaceutical Association to reconsider its vote, directing the publication of the Report on the Progress of Pharmacy in monthly installments in the JOURNAL, and that the Council be further requested to publish the Report in a separate bound volume, as agreed upon at the Richmond meeting."

In connection with this subject, it is in order to state that at the Denver (1912) meeting of the Association, the action of the Richmond (1910) meeting was reconsidered, and it was decided to publish the Report on the Progress of Pharmacy covering the period from June 30, 1910, to December 31, 1911, with the official data, etc., as a separate volume or Proceedings (Volume 59, 1911), and also, that future Reports on the Progress of Pharmacy be published monthly in the JOURNAL, beginning January, 1913, (Journ. A. Ph. A., 1912, 1103).

In view of the importance of this question —if it is to be reopened—and the fact that it cannot properly be disposed of by mail-vote, and that, no matter which way the vote goes, the subject will be brought up again at the Nashville meeting, it is suggested that the consideration of the subject be postponed until that date.

Furthermore, the Committee on Publication is considering the question and will report upon it at the Nashville meeting.

The subject has been discussed in Council Letters No. 3 (November 19, 1912), by C. Lewis Diehl; No. 4 (December 2, 1912), by H. H. Rusby; A. H. Clark and W. B. Day; No. 6 (December 13, 1912), by James O. Burge, J. M. Good and Thomas F. Main. and No. 7 (December 26, 1912), by A. H. Clark.

Motion No. 24 (*Appropriation* of $100 *to National Drug Trade Conference, Second Meeting*). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of $100, or so much thereof as is necessary, be appropriated for the payment of the expenses of the delegates to the second meeting of the National Drug Trade Conference. The above appropriation is approved by the Committee on Finance.

Motion No. 25 (*Election of Members*). You are requested to vote on the following applications for membership:

No. 155. Sister Mary Bernard Welch, Hotel Dieu, 4004 Tulane Ave., New Orleans, La., rec. by Philip Asher and H. M. Whelpley.

No. 156. Philip Reiser, 562 Auburn St., Camden, N. J., rec. by George M. Beringer and J. W. England.

No. 157. Robert V. Johnson, Sgt. 1st Class, Hosp. Corps, U. S. A., Hospital Columbus Barracks, Columbus, Ohio, rec. by John Baigent and Lewis D. Harp.

No. 158. W. A. Talbott, Warren, Pa., rec. by J. H. Beal and J. W. England.

No. 159. Carl Paul Schlicke, 440 Washington St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 160. Jacob Weil, 225 Canal St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 161. Paul H. Brickelmaier, 220 Greenwich St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 162. R. Wilfred Balcom, Custom House, Nashville, Tenn., rec. by E. A. Ruddiman and William R. White.

No. 163. Harry E. Stewart, 15-17-19 East Adams St., Jacksonville, Fla., rec. by J. H. Beal and J. W. England.

No. 164. Max Mackler, 387 S. Water St., New Bedford, Mass., rec. by Leon A. Thompson and Elie H. LaPierre.

No. 165. Clarence Earle Armstrong, Flat River, Mo., rec. by H. M. Whelpley and J. W. Mackelden.

No. 166. William James Warner, Tillansook, Oregon, rec. by John M. A. Laue and Ralph Crysler.

No. 167. Otto Stanley Marckworth, 426 Chamber of Commerce, Columbus, Ohio, rec. by J. H. Beal and J. W. England.

No. 168. Robert Monroe Walker, 1408½ East 43d St., Seattle, Wash., rec. by Charles W. Johnson and Harry J. Siegel.

No. 169. Harry L. Harris, 100 William St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 170. Edgar Philip Heidbreder, 1707 Broadway, Quincy, Ill., rec. by A. H. Clark and W. B. Day.

No. 171. Earl William Rahn, 2308 E. 103d St., Cleveland, Ohio, rec. by T. Bernard Tanner and Lewis C. Hopp.

No. 172. Otto Klingmann, 2631 8th Ave., New York, N. Y., rec. by Louis Berger and Hugh Craig.

No. 173. Hugo Hermann Schaefer, 801 A Willoughby Ave., Brooklyn, N. Y., rec. by George C. Diekman and C. O. Bigelow.

No. 174. Leo Stein, 410 West 13th St., New York, N. Y., rec. by George C. Diekman and C. O. Bigelow.

No. 175. Leo Roon, 15 Main St., Port Washington, N. Y., rec. by George C. Diekman and Carl P. Wimmer.

Very truly yours,

J. W. ENGLAND, Secretary.

415 N. 33d St., Philadelphia, Pa.

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COUNCIL LETTER No. 14.

PHILADELPHIA, May 29, 1913.

To the Members of the Council:

The following tentative program for the sixty-first annual meeting of the Association to be held at Nashville, August 18-23, 1913, is submitted by the General Secretary, Secretary of the Council and Local Secretary:

Monday, August 18.

9:00 a. m.	Meeting of the Council.
10:30 a. m.	National Association of Boards of Pharmacy.
3:00 p. m.	First General Session of the Association.
7:30 p. m.	First Session of the House of Delegates.
9:30 p. m.	President's Reception.

Tuesday, August 19.

9:00 a. m.	Meeting of the Council.
10:30 a. m.	Second General Session of the Association.
2:30 p. m.	Women's Section.
	Section on Scientific Papers.
	Section on Commercial Interests.
	National Association Boards of Pharmacy (second session).
7:30 p.m.	Second Session of the House of Delegates.
	Section on Pharmacopœias and Formularies.

Wednesday, August 20.

9:00 a. m.	Meeting of the Council.
10:30 a. m.	Section on Education and Legislation.
12:00 p. m.	Reunions of College Alumni.
2:30 p. m.	Section on Practical Pharmacy and Dispensing.
	Conference of Pharmaceutical Faculties.
6:30 p. m.	Reunions of College Alumni.
8:00 p. m.	Section on Education and Legislation (second session).
	Section on Commercial Interests (second session).
	Women's Section (second session).

Thursday, August 21.

9:00 a. m. Meeting of the Council.
10:30 a.m. Joint Session of the Section on Education and Legislation, Conference of Pharmaceutical Faculties, and National Association of Boards of Pharmacy.
2:30 p. m. Women's Section (third session).
Section on Scientific Papers (second session).
Section on Practical Pharmacy and Dispensing (second session).
4:30 p.m. Trolley Ride over the City of Nashville.
8:00 p. m. Garden Party and Park Concert.

Friday, August 22.

9:00 a. m. Meeting of the Council. (Organization meeting.)
10:30 a. m. Section on Historical Pharmacy.
Conference of Pharmaceutical Faculties.
2:30 p. m. Excursion to the Hermitage.
8:00 p. m. Section on Historical Pharmacy (second session).
Third Session of the House of Delegates.
Section on Pharmacopœias and Formularies.

Saturday, August 23.

9:00 a. m. Meeting of the Council.
10:30 a. m. Final General Session of the Association.

In preparing the above program the aim has been to give two or more sessions to each Section. If the time allotted is not sufficient for the completion of the work, it is presumed that the Section or Society will arrange for adjourned meetings at such times as will not interfere with other portions of the general program.

Comments on the above program and motions for amendments should be sent to the Secretary of the Council, J. W. England, 415 N. 33d St., Philadelphia, Pa., in time for the next issue of the JOURNAL.

Do you approve above Program? This will be regarded as *Motion No.* 26 (*Approval of Suggested Program for* 1913 *Annual Meeting*).

Motion No. 27 (*Election of Members*). You are requested to vote on the following applications for membership:

No. 176. Albert Cook, 1805 N. 10th St., Terre Haute, Ind., rec. by Clyde M. Snow and W. B. Day.

No. 177. William Michael Knapp, Roanoke, Ill., rec. by A. H. Dewey and C. B. Jordan.

No. 178. George Charles Kraemer, 5969 South Boulevard, Chicago, Ill., rec. by E. N. Gathercoal and W. B. Day.

No. 179. Edward Luckiesh, 205 S. Summit St., Maquoketa, Iowa, rec. by W. B. Day and E. N. Gathercoal.

No. 180. Marvey Harrison, 200 East Main St., Dothan, Ala., rec. by Max Morris and J. H. Beal.

No. 181. Edward W. Harrington, 203 W. 6th Ave., Columbus, Ohio, rec. by Anna G. Bagley and J. H. Beal.

No. 182. Clifford C. Glover, 520 Hill St., Ann Arbor, Mich., rec. by W. S. Hubbard and A. B. Stevens.

No. 183. George J. Shull, Sergeant 1st Class, Hospital Corps, U. S. A., Fort Thomas, Kentucky, rec. by W. B. Day and A. H. Clark.

No. 184. Ferdinand C. Schapper, 192 N. Clark St., R. 401-406, Chicago, Ill., rec. by W. B. Day and A. H. Clark.

No. 185. Douglas McGill Penick, 918 Commerce St., Lynchburg, Va., rec. by William R. White and J. O. Burge.

No. 186. William L. Hardigg, Evansville, Ind., rec. by H. M. Whelpley and Theo. F. Meyer.

No. 187. Isaac Clifton Smith, Ocilla, Ga., rec. by Max Morris and W. S. Elkins, Jr.

No. 188. Charles A. Gilbert, 159 Broadway, Providence, R. I., rec. by James O'Hare and William O. Blanding.

No. 189. Forest E. White, Sgt. 1st Class, Hospital Corps, Fort Porter, Buffalo, N. Y., rec. by W. B. Day and A. H. Clark.

No. 190. John Douglas Glancy, Main St., West Upton, Mass., rec. by Elie H. LaPierre and Theodore J. Bradley.

No. 191. Nicholas Ernest Boyajian, 332 Tremont St., Boston, Mass., rec. by Theodore J. Bradley and Elie H. LaPierre.

No. 192. Edgar O. Greeno, Port Casey, Wash., rec. by W. B. Day and A. H. Clark.

No. 193. Samuel Charles Davis, 3201 West End Ave., Nashville, Tenn., rec. by J. F. McGill and E. A. Ruddiman.

No. 194. J. Hungerford Smith, 410 N. Goodman St., Rochester, N. Y., rec. by J. H. Beal and J. W. England.

No. 195. Elsa Grace Tickhardt, 1042 Madison Ave., New York, N. Y., rec. by James T. Hostman and Louis Berger.

No. 196. Jacob H. Rehfuss, 252 Sumner Ave., Brooklyn, N. Y., rec. by Hugh Craig and Louis Berger.

No. 197. Thomas F. Raymow, 559 Coney Island Ave., Brooklyn, N. Y., rec. by William C. Anderson and Louis Berger.

No. 198. Isaiah Solomons, Jr., care Solomons Co., Savannah, Ga., rec. by Louis Berger and H. V. Arny.

No. 199. Archie Percival Lohness, 565 Quincy St., Brooklyn, N. Y., rec. by Wm. C. Anderson and Joseph S. Moyer.

No. 200. Cyrus Thurston Gilbert, 27 Stevens St., Danbury, Conn., rec. by Charles H. LaWall and M. R. LaWall.

No. 201. Hugo Winkler, Sergeant 1st Class, Hospital Corps, Post Hospital, Fort Slocum, N. Y., rec. by Alex Berkowitz and Harvey A. Allen. Very truly yours,

J. W. ENGLAND,
Secretary of the Council.

415 N. 33d St., Philadelphia, Pa.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.

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HENRY M. PETTIT.

Dr. Henry McEwen Pettit, of Carrollton, Mo., died suddenly on April 10, 1913, at the home of his sister in Frederick, Md.

Dr. Pettit was born in Cumberland, Md., April 3, 1836. He lived there until a lad of eleven years when, the father having died, the family moved to Frederick, Md., where he received his early education. At the age of seventeen, he went to Philadelphia, entering one of the largest stores of that city. Two years later he secured a position with a drug firm in Pittsburgh.

When he attained his majority he came West and spent two years in Missouri, Kansas and Nebraska, a part of which time he was in business with Barker & Co. Later he was with a drug firm in Leavenworth, Kansas.

In the fall of 1859 he returned to his old home, continuing in business there until the outbreak of the Civil War. He left Pittsburgh the day Fort Sumpter was bombarded, took the first opportunity to go South, and during the war was in the Medical Department of the Southern Army as Hospital Steward on the staff of Dr. Cullom, Medical Director of Longstreet's corps, and on post duty in a hospital in Virginia. He was also Acting Assistant Surgeon and Executive Officer in the hospital at Raleigh, N. C.

At the close of the war, having been a prisoner for several weeks, he was surrendered at Raleigh, and remained in charge of the hospital until as long as a wounded Confederate soldier remained there.

In 1868 he came West and remained in Rock Island, Ill., for a few months, and then came to Carroll county, Missouri, where he and his brother bought a farm. Later, he rented this, and went to Leavenworth, Kansas.

In 1877 he entered the employ of George W. Smith, of Carrollton, and since then he has been a resident of Carrollton. He continued as manager of the drug store of Mr. Smith until 1888, when upon the death of Mr. Smith, he associated himself with O. T. Welch and they purchased the business, since which time the firm has been known as Pettit & Welch. He became a member of the American Pharmaceutical Association in 1860, and has frequently attended its annual meetings.

Dr. Pettit was made a Mason in Petersburg, Va., in May, 1863. He was a charter member of Covenant Lodge, a Past Master of Carrollton Lodge, F. and A. M. He was exalted as Royal Arch Mason in George Washington Chapter, of which he is a Past High Priest. He assisted in the organization of Navarre Commandery, Knights Templar, and has since been its Eminent Commander. For two years he was secretary of all of the Masonic bodies of the city. Being much interested in the Eastern Star, he was for many years Worthy Patron of that order, and also its Grand Patron.

Dr. Pettit affiliated with the Episcopal

Church of Carrollton, was one of the founders of the church and was most active in its behalf.

As a citizen Dr. Pettit was one of the cleanest and the best. His stand was always with what he recognized as right, and on all public questions he was on the moral side.

Dr. Pettit was never married, yet he gave much of his time to society. He loved young folks, and he never lost an opportunity to entertain them.

For several years, Dr. Pettit had been in failing health. He left Carrollton on February 28 to go to the home of his sister in Frederick, Md., for an extended visit.

This is a brief sketch, as a local paper states, "of one who was known to all our people: who lived in our midst nearly forty years, one whose life was above reproach; one who lived to make others happy, and now he has gone to his reward and his friends here sincerely mourn his departure."

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THOMAS B. NICHOLS.

Thomas Boyden Nichols, for many years a pharmacist in Salem, Mass., died on Sunday, May 4, 1913. Mr. Nichols has been a member of the American Pharmaceutical Association from 1887 to the present time; member of the Massachusetts College of Pharmacy, and has served as a Trustee and Auditor; he was a Mason and Treasurer of his Lodge. Mr. Nichols was a bachelor, quiet and unassuming, of sterling character. His presence will be missed by the pharmacists of Massachusetts whom he numbered as friends. J. W. E.

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HENRY A. BORELL.

Henry Augustus Borell was born in Reading, Pennsylvania, February 19, 1846. He was the son of the late John and Christina (nee Lauer) Borell. He died April 13, 1913.

Mr. Borell received his early education in the public schools and at the Lititz Academy, Lititz, Pennsylvania. After he left school he went into the brewing business in Schuylkill County, and continued in business as a brewer until the Civil War in 1861, when he enlisted in the Union Army.

After three and one-half years of service he was honorably discharged. He then went to Philadelphia and secured a position as a clerk in Hubbell's drug store, on Chestnut Street above Broad Street. As a reward for his faithful services, Mr. Hubbell gave him a course in the Philadelphia College of Pharmacy, from which he was graduated in 1872.

Later, G. I. McKelway and H. A. Borell became partners in the business with Mr. Hubbell, and in a few years Mr. Hubbell retired from the business, and the drug store was run under the firm name of McKelway and Borell, continuing as such for several years, when Mr. McKelway bought out Mr. Borell's interest in the business. Henry A. Borell then purchased a drug store at 2043 Chestnut Street and owned this business until the time of his death.

Mr. Borell was married to Miss Kleinert of Mount Carbon, Pa., whose death occurred thirteen years ago. They had no children.

Up to the time of Mr. Borell's death, he was a charter member and director of the West End Trust Company; also a partner of the Rumsey-Borell Drug Company, 52d and Market Streets, Philadelphia, and conducted personally a drug store at 60th and Market Streets, Philadelphia. He became a member of the American Pharmaceutical Association in 1874.

Interment was had on April 17, 1913, in South Laurel Hill Cemetery, Philadelphia, the George Meade Post No. 1, G. A. R., attending, of which Post the deceased was a member. J. W. E.

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UNITED STATES PUBLIC HEALTH SERVICE.

Ryder, L. W., Pharmacist. Granted two days' leave of absence March 15 and 20, 1913, under paragraph 210, Service Regulations. April 16, 1913.

Irwin, C. H., Pharmacist. Granted four days' extension of annual leave, on account of sickness, from April 2, 1913. April 16, 1913.

LaGrange, J. V., Pharmacist. Granted 22 days' extension of leave of absence on account of sickness from April 1, 1913. April 26, 1913.

Spangler, L. O., Pharmacist. Granted

three days' leave of absence from April 25, 1913. April 24, 1913.

Berkowitz, M. E., Pharmacist. Granted four days' leave of absence from April 21, 1913, under paragraph 210, Service Regulations. April 26, 1913.

LaGrange, J. V., Pharmacist. Granted one days' leave of absence, May 13, 1913, under paragraph 210, Service Regulations. May 13, 1913.

Carlton, C. G., Pharmacist. Granted seven days' leave of absence from May 7, 1913, under paragraph 210, Service Regulations. May 6, 1913.

Irwin, C. H., Pharmacist. Granted 30 days' leave of absence from June 3, 1913. May 13, 1913.

PROMOTION.

Pharmacist Charles H. Irwin promoted to Pharmacist of the second class, effective April 9, 1913. April 21, 1913.

Official: RUPERT BLUE,
Surgeon General.

THE WORLD AND MAN.

The world is a wonderful sort of a place;
Man works and tries in it,
Laughs in it, cries in it,
Lives in it, dies in it—
All in a very short space.

The world has some lessons for thinkers to teach
And thousands of sermons for preachers to preach.
Some of us know it to call it by name,
Others know much of its sorrows and shame.
Some of us romp through its meadows in glee;
Others see things that men sicken to see;
Graft and corruption, sugar and sin,
Thousands of losers to one that can win;
Queer, swinelike men in the city's wild whirl,
Asking for gold, for the soul of a girl;
Pitiful pomp living over the way—
All of it seems like some grim, sordid play.

The world is a wonderful sort of a place;
Man gets his woes from it,
Takes what he knows from it,
Comes to it, goes from it—
All in a very short space.

—*William F. Kirk.*

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.

<>

ANDERSON, C. G.,
From 413 W. Division St., Chicago, Ill.
To 1920 Sedgwick St., Chicago, Ill.

MEADE, HAROLD B.,
From Washington, D. C.
To 4822 N. Warnock St., Philadelphia, Pa.

COOPER, MISS ZADA M.,
From 124 Bloomington St., Iowa City, Ia.
To Red Oak, Ia., R. F. D. No. 2.

CREIGHTON, MISS MARY L.,
From 2246 Fourth St., San Diego, Calif.
To Scio, Ohio.

ELCOOK, WM W.,
From Ft. Bliss, Texas.
To Camp Gregg, Bayambang, P. I.

GITHENS, THOMAS P.,
From 1327 Pine St., Philadelphia, Pa.
To Rockefeller Institute, 66th St. and Ave. W., New York City.

LEDERLE, A. L.,
From 32 Adams Ave. W., Detroit, Mich.
To Leland, Mich.

MAISEL, JOSEPH,
From 133 Third Ave., Brooklyn, N. Y.
To 866 Kelly St., New York, N. Y.

MCMILLAN, DANIEL N.,
From 323 Washington St., Portland, Ore.
To 494 Washington St., Portland, Ore.

BILLINGS, HENRY M.,
From 28 W. 50th St., New York City.
To So. Poland, Maine, care Forrest Walker.

MILLER, LAWRENCE JOHN,
From 610 Park St., McKeesport, Pa.
To Box 7, Sutersville, Pa.

O'GORMAN, T. V.,
From Ellis Island, N. Y.
To St. Joseph's Home, 209 W. 15th St., New York City.

REYNOLDS, GEO., Sgt. 1st Class, H. C., U. S. A.,
From Ft. Bayard, N. Mexico.
To Presidio, San Francisco, Calif.

SCHENK, MRS. KANNIE K.,
From Durant, Okla.
To Deer Trail, Colo.

SCHLICHTING, A. F.,
From 520 Hill St., Ann Arbor, Mich.
To Agricultural College, N. Dakota.

SCHWARTZ, MAURICE P.,
From 2184 Talbot Ave., Indianapolis, Ind.
To 1026-30 Kentucky Ave., Indianapolis, Ind.

VENNEMAN, H.,
From Ft. Snelling, Minn.,
To 200 W. Indiana Ave., St. Paul, Minn.

WARD, A. JAE,
From 2915 14th Ave., Denver, Colo.
To Arcade No. 1, Railway Exchange Bldg., Denver, Colo.

WILSON, CHAS. F.,
From 200 E. 31st St., Chicago, Ill.
To 355 E. 30th St., Chicago, Ill.

TO RESIDENCE UNKNOWN.

DOUGLAS, ROBERT J.,
From Camp Jossman, P. I.

ORTH, GUSTAVE,
From Hot Springs, Ark.

SWEENY, JAMES,
From Ft. Wayne, Michigan.

SHAW, CHAS. N.,
From Ft. McKinley, P. I.

NOSTRUMS IN AUSTRALIA.

In Australia the traders in nostrums are much exercised at certain recent legislation directed against the evil. The council of the Melbourne chamber of commerce has endorsed the protest made by the Sydney chamber of commerce against the regulations of the Board of Health of Western Australia requiring the publication of the formulas of infants' and invalids' foods and proprietary medicines. Replying to the protest, the minister, Mr. W. C. Angwin, has issued a statement that the regulations have been made under the provisions of the health act, which provide for the formulas appearing on the label or being deposited with the commissioner of public health. The health act contains certain drastic powers in connection with "patent medicines," and it is in order to have them effectively carried out that these regulations are now adopted. The sale of "patent medicines," for instance, containing deleterious drugs, may be prohibited, and the depositing of the formulas with the department will materially assist in the detection of any such deleterious substance. The regulation provides an alternative. The formulas may be deposited with the department instead of appearing on the bottle. All formulas deposited will be maintained in strict confidence. In regard to infants' and invalids' foods, the department is quite willing to permit the depositing of the formulas confidentially in the same manner as with "patent medicines." In the case of both "patent medicines" and infants' foods, the public should be able to know exactly what is being bought; when makers are unwilling to take the people into their confidence, then the public health department should know exactly what is there. Undoubtedly a great deal of fraud is perpetrated in this matter, and it is to prevent that, and also prevent injury to health from a use of such medicines and food that these regulations are now put forward.—*Journ. A. M. A., V. LX,* 844.